Introductory Lecture

DELIVERED AT THE

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GENTLEMEN,—In the observations which I am about to address to you to-day, at the outset of your medical career, I shall take for granted that you have already made up your minds to devote your future life to the profession, and shall, therefore, use no arguments to convince you that the object is a noble one—one well worthy of your best energies and efforts. I shall speak to you as to men who are already enrolled as comrades, whose business it is to learn our drill, so that whether you serve in the rank and file of ordinary practice, or aspire to those higher positions for which harder work and greater attainments are necessary, you may acquit yourselves honourably of your duty.

Whatever special career you intend to follow in after-life your education remains the same. Whether you intend to engage in general practice or in consulting, whether in town or country—in surgery, or medicine, or obstetrics, your training ought in all important respects to be the same. Medical training comprises all that fits you to be a doctor—all that fits you, not to do credit to yourselves or even to your profession, but to do good to your patients—to save their lives or ease their sufferings. For these purposes two things are wanted—*knowledge* and *skill*,—knowledge of the most satisfactory and interesting kind, comprising acquaintance with medical experience on the one hand, with medical science on the other; and skill in the exercise of the medical arts—therapeutics, surgery, and obstetrics.

But most of you are, I doubt not, already aware that these are not the *only* purposes of medical training. Besides preparation for practical work, which is by far the most important, there is another preparation necessary for your examinations—viz., the importance which each of you will assign to the two preparations will depend on your estimate of your future responsibilities and duties as practitioners. If it is your impression that medical practice is a business that any intelligent person is able to carry on successfully who has acquired a little practical experience and acquaintance with the use of a few drugs, then of course you will regard the passing the examination as the principal, if not the only object that you have in view. For when a man looks on his profession as a trade, it is the fear of being rejected by the examiners, and of the consequent inconveniences, which alone restrains him from absolute idleness—the hope that he may succeed in persuading them to sanction his ignorant drugging of his fellow-men, is the highest incentive for his exertions. But I take it for granted that this is not the spirit in which you have entered on the occupation of your life, and that you have already made up your minds to work at your studies here, not for the purpose of slipping through at Lincoln's-inn-fields or Blackfriars, but in order that when the time comes you may enter on your professional duties with the boldness of the man who is thoroughly prepared for his work, and who feels each time he leaves the bedside of a patient, "I have done, not *my* best (for that might be a very poor best indeed), but *the* best. I have done all that medical experience teaches was expedient in this case, and have left nothing undone that I ought to have done."

I need no arguments to show that this is the only way in which the daily work of life can be a pleasure. On occasions like the present one is tempted to launch out into platitudes about the divine art of healing, and the supreme happiness of being occupied in good-doing. There is truly much satisfaction in thinking that our future business will be to "go about doing good." But, as human nature is constituted, it is only a few who are capable of experiencing it. Medicine is truly a God-like occupation; but how few there are who, even while pursuing a divine art, are animated by divine motives! The pleasure to which I refer is less elevated, but more easy of attainment. It is one which every earnest, upright man, who has a sound mind in a sound body, may, and does, constantly enjoy. It is the inexhaustible pleasure which the man who is conscious that he is mentally and physically competent for his work, and is determined to use the powers God has given him for the purposes for which He has bestowed them, finds in the very efforts which are necessary in order to carry that determination into effect. Make up your minds then that, whatever other sources of enjoyment you may find in life, there is an inexhaustible source in fruitful work, and especially in professional work. But bear in mind, also, that in order to work fruitfully hereafter, you must work laboriously now in possessing yourselves of all the knowledge and skill which your own abilities, and the short time which is assigned you for preparation, will admit of. If you do this, the work of seeing patients will be a pleasure, not a vexation—a pleasure of which the degree and intensity will be found (in accordance with an inevitable law) in exact proportion to the amount of labour spent by you in purchasing it. In other words, if you would go through what is called the routine of practice with satisfaction the first thing is to possess the requisite knowledge and skill; the second is, that when you go to the bedside of your patient you should acquire the habit of concentrating all the energies of your mind to the consideration of his case, so as to bring to bear upon it all the knowledge you possess, whether acquired by your own observation or experience, or communicated to you by others; and that until you have made up your mind what is to be done for his relief, you should allow no other subject to intrude itself on your thoughts or withdraw your attention, even for a moment. It is by the habit of painstaking attention to each individual case that all good practitioners have acquired that power over disease that makes them trusted by the public. Such men rejoice in their work, are bold in the selection of remedies, and skilful in their application. It is the glory of our profession in this country that it contains a large proportion of men of this stamp—men who really come up to this standard of practical excellence—men who do not *say* that they value their patients' lives more than their own, but who *act* as if they did. While in the sick room they are so entirely engrossed and absorbed in their work that no thought of self crosses their minds. We are all personally acquainted with such men. Let us follow their example, and try to be animated with their spirit; and to this end let us, while we are students, use every effort to qualify ourselves for our work, never forgetting that no amount even of painstaking afterwards will make up for neglected opportunities now. For you may depend upon it that life is much more frequently destroyed by the omissions or blunders of the ignorant than saved by the most judicious efforts of the most skilful and experienced practitioner.

I have now said all that I intend to say to you in the way of admonition. I turn with pleasure to the second part of my subject—the describing to you the nature of the studies in which you are about to engage. In doing so I shall endeavour to communicate to you as clear an idea as I can of their relation to each other, and of their bearing on the practical work of your future life.

I stated to you before, that medical education consists (1) in the possession of the requisite knowledge, and (2) in the acquirement of the requisite skill in the medical arts. To-day I propose to confine my attention entirely to the first of these two main divisions: principally because I have not time, and cannot pretend within the short compass of an address like the present, to give a complete account of medical education; partly because the absolute necessity of learning the medical arts, therapeutics, surgery, and obstetrics—i. e., of acquiring skill in the use of all those means and appliances by which we minister to the sick, cure their diseases or relieve their sufferings,—is so obvious that it scarcely needs enforcing.

Medical knowledge is of two kinds. One kind is called medical science, the other medical experience.

Medical experience is that kind of knowledge which is most directly applicable in practice; for it is the knowledge on which the medical man exclusively depends in the treatment of disease. Whatever be the nature of the case you are called upon to treat—whether, for example, it be a disease like measles or scarlatina or small-pox, which any old nurse can recognise, or some complicated disease of an internal organ,—we depend entirely on medical experience, first for finding out what is the matter with the patient, and secondly for determining on the proper treatment.

Medical experience is also known by the terms "clinical medicine and surgery," because it is gained for the most part at the bedside of patients. It is not, however, confined to the observation of one physician, surgeon, or practitioner. It is something infinitely larger than this. It comprises the whole

mass of the bedside knowledge possessed by all the medical men that now exist or that have existed in former ages. Nor is this all; for although mostly gathered at the bedside of the sick, it also includes that more precise information as to cases, which we gain after disease has done its worst. I refer to the anatomical examination of the body after death, by which the views which we had entertained during life, whether as to symptoms or treatment, are either confirmed or corrected.

Thus you see that the field of medical experience is of immense extent—so vast, indeed, that to explore it perfectly is far more than the work of a lifetime. Yet, however extensive, it must be mastered, more or less perfectly, by every man who aims at thorough fitness for his profession. As I have already hinted, and cannot too often repeat, in the business of medical practice, and particularly in the selection of remedies, we are guided, not by our knowledge of causes, but of cases—i. e., we choose those remedies which have been found in the general experience of the most judicious physicians to be most useful, without, for the moment, occupying ourselves either with the theory of their action or the essential nature of the disease they are intended to remedy. It is this, indeed, which constitutes the difference between ourselves and the homœopathists and other classes of dogmatists: not at all that we deny and disbelieve their principle, or that we maintain the opposite one, but that we refuse to adopt into our repertory any remedy which cannot be proved to have been useful, or, as we commonly express it, which has not received the sanction of *experience*. It need scarcely be added, that this principle does not preclude empirical medicine from using untried remedies experimentally, whether such remedies are suggested by speculations as to their action, or by accident. So much, then, for experience.

I now turn to the other kind of knowledge, which, though not so indispensable for practice, will rightly occupy your attention during your period of study. I propose to devote the remainder of my lecture to the explanation of its use and value, and the ground we have for hoping that, notwithstanding the fact that up to the present time it has done very little indeed for practical medicine, our whole knowledge of which has been hitherto gained merely by experience, the time may, perhaps, be even now approaching when, like so many other more perfect sciences, that of Medicine may at last bear fruit.

What is properly called *medical science* relates exclusively to the cause and nature of disease, and the *modus operandi* of remedies. With the exception of that practical knowledge of cases which we have already designated "experience," it includes all and everything that it is necessary for you to learn. It comprises no subjects, excepting those which either immediately concern diseases and the artificial disorders which are intentionally or accidentally produced by drugs or other external agents, or those of which the knowledge is absolutely indispensable for the understanding of them.

With this extension of meaning, you will find that the science of disease comprehends almost all the subjects enumerated in the usual programme of medical education, as set forth, for example, in our prospectus; and that, although they look so complicated on paper, they form but one system of knowledge, one science, in which facts obtained from every possible source—from the chemical laboratory, from the wards, from the post-mortem theatre—are studied, not with the immediate purpose of finding out how to treat the diseases to which they relate, but in order to discover their nature, and, above all, their efficient causes. It is because this is the method according to which we work, that we are justified in calling pathology or the principles of medicine a *science*, in contradistinction to experience, which is contented with collecting and classifying separate observations, without inquiry into the causes of the facts to which they relate.

In this sense, then, the *Science of Medicine* consists of four subjects—viz.: 1. Physics and Chemistry; 2. Descriptive Anatomy; 3. Vital Physics and Vital Chemistry, or Physiology; 4. Pathological Physics and Chemistry, or Pathology (in the strict sense). I propose to give an account of each subject in its bearing on medical study.

Physics, commonly called in this country natural philosophy, as it is unquestionably the most important preliminary study for a medical student, ought to stand first in the order of time. If you ask why, I answer that without it you cannot properly understand a single chapter in Physiology. For want of this knowledge we find practically that when we begin to talk to you about the living human body, the way in which the complicated processes of life are carried on—the circulation of the blood, the maintenance of a fixed temperature, the mechanism of respiration and of progression — our observations altogether fail in explaining what we intend to teach. And why? Because those whom we are addressing know neither the words we use nor the ideas which they represent. Of what use, for example, is it that I should talk to you about the exchange of gases in breathing when you have not the vaguest idea of what is meant by a gas, or in what respect it differs from a liquid? Or what possible benefit can you derive from being taught the remarkable influence exercised on living *nerve* by the constant voltaic current, when you neither know the meaning of "constant" nor of "current"? Again, if I laboriously explain to you the effect of the colouring matter of the blood on the solar spectrum, and describe to you the remarkable modifications of this effect which are observed in disease, what instruction can you gain unless you have some previous notions about the properties of light?

I will not weary you with more examples. These are sufficient to show that, without physics, to pretend to study physiology is mere trifling.

The next subject I have to speak of is Chemistry. Chemistry, as you will find when you come to study it, is an enormous subject. Strictly speaking, it is a part of physics, and like physics is fundamental—i. e., it is of value not so much for the direct practical use of the information it gives, as because it furnishes us with fundamental ideas—ideas on which others are built, or from which they spring,—and consequently with the elementary words of our science; intelligible words, capable of conveying with them exact and definite meanings. I have said that, strictly speaking, it is a branch of physics, because, according to the definition I gave just now, it also treats of the powers of matter. It is a branch, however, of such enormous proportions that it rivals the trunk from which it springs. It is the science which relates to the analysis or decomposition of all kinds of matter to the utmost possible limits, the means by which matter can be split up into its ultimate elements, and the order in which these elements come together again.

Now formerly, even when some of your teachers commenced the study of medicine, chemistry was a mere collection of facts, carefully observed enough, arranged according to their relations to each other, but with many breaks and intervals where the ground was still open to speculation. It presented itself to the student rather as a collection of names than as a system of ideas, and the names were for the most part uncouth, or at all events in themselves meaningless. When I began my medical studies an immense progress had been made. The great law that elements (i. e., ultimate results of analysis) unite, not by chance or according to circumstances, but always in definite proportions by weight, had reduced the chaos of facts to order. For the universality of the law had even then been fully established, in such sense that chemists were able to state that all bodies of definite composition must have been formed by the union of their elements in definite proportions. From this law others have sprung, the greatest of all in importance being that elements combine not merely in definite proportions, but in proportions which are the same as those of the specific weights of their gases or vapours. By this great generalisation the two sciences of physics and chemistry have become what the French call *solidaires*. The chemical and mechanical properties of matter have become connected, and in this way chemical ideas have attained that degree of clearness and precision which entitles the science to be called "exact."

At the present moment the range of chemistry is daily and hourly increasing. It is not in the least exaggerating to say that new discoveries are being made every day. For now that the laws of chemical combination, or synthesis, are so well and so perfectly understood, new kinds of matter can be produced at the will of the operator, in almost indefinite number and variety—not, as in former times, by searching for them ready made in nature, and separating them from the raw material of natural products by long and laborious analysis, but by the opposite process of synthesis—by bringing together the constituents of the bodies to be formed or produced, under conditions which are controlled and prepared beforehand by one who knows the laws according to which they will combine. By this synthetical method, which has already wonderfully enriched and beautified the world in which we live, products have already been discovered which are of inestimable value in the relief of human suffering; and we may confidently hope that the results of synthetical chemistry will be of as great value to the art of medicine as they have already been to the other arts of life. But it is not with this application of chemical knowledge, however attractive, that you have to do as medical students. Chemistry, as I have said, is an immense subject—so immense that its study constitutes the life work

of a learned profession to which neither you nor I intend to belong. What we have to do with chemistry is, first, to study the fundamental ideas: such, for example, as that of the combination of bodies in definite proportions, that of the relation between the chemical properties of bodies and their densities, the relation between chemical action and the production of heat, light, and electricity. Then, secondly, we have to become acquainted with the most important elements and their combinations, particularly with all those (and they are numerous enough) which enter into the composition of the animal body. And, lastly, we have to study the chemical processes of life. The absolute necessity of studying these subjects arises, not from their being required for your examination (for the examinations you have to pass in chemistry are trifling enough), but from the impossibility of your understanding disease or the action of remedies without them, for the very plain reason that many of the most important processes in the body are entirely chemical, and that of many diseases we can form no conception except a chemical one. This I propose to illustrate by an example.

You all know, probably, that the atmosphere consists of two gases; and that of these two, one, which constitutes only about a fifth of the whole, is the most important, and is called oxygen; for without it no living process can go on for a single instant, so that we *must* have oxygen, not only in our lungs, but wherever any life is going on. You have long ago learnt that the "blood is the life"—a dogma of which the truth consists in this: that, as it flows, it distributes oxygen to every living part. The way by which it conveys it is purely chemical. The whole process can be imitated on this table, or in the adjoining laboratory. The blood is able to carry oxygen because it contains a body which is called hæmoglobin (or cruorin), which can be separated from it in a state of purity, and forms beautiful crystals, just as sugar or carbonate of soda might do. Besides possessing many other noteworthy chemical and physical properties, this body has the remarkable faculty of seizing the oxygen of the air to which it is exposed in the lungs, and holding it fast, yet not so fast but that it lets it go where it is wanted—i. e., everywhere where *life* is going on.

Here is a chemical process which we now understand, or, at all events, know a great deal about; for, as I have said, we are able to imitate it in a glass on this table, and find that the process which was so long a puzzle—which, when I was a student, was not at all understood,—goes on just in the same way in the glass as it does in the secret recesses of the living body.

Thus, a solution of hæmoglobin, which contains as much of the compound as exists in so much blood, dissolves oxygen just in the same way and in the same proportion as blood does. When we add oxygen to blood (or common air, which contains it), we observe a remarkable change of colour, from the purple of the veins to the florid of the arteries. The same change takes place in our solution. In short, the whole of the changes which the blood undergoes, on the one hand in the lungs, where it is exposed to the air, on the other in the body, where it gives off oxygen at every moment to the living parts, is purely physical and chemical. With chemical and physical knowledge, we understand it perfectly; without, we could form no conception of it. Yet you see that this process is more important to the welfare of the body than any other. For, as I told you before, the life of the most minute particle of the body could not be maintained for a single half second without oxygen; so that the interruption of the chemical work that this body, hæmoglobin, does for a single second would be instant death.

I pursue the illustration one step further. I have said that we know a great deal about what hæmoglobin does in health. We know something about the part it plays in disease, not nearly so much as we shall know five years hence, but much more than five years ago. There is a certain gas (carbonic oxide) which, when it enters the blood, even in very small quantity, very rapidly destroys life. Its poisonous action is recognised by a rapid change of colour—a change very different from the pale lividity we ordinarily associate with death,—a *brightening* of the flesh-tints of the body. The reason that this gas is so poisonous is exclusively a chemical one. It acts, not on the nerves or the heart, but on the cruorin of the blood and muscles. It has so strong an affinity with this cruorin that it displaces its oxygen, and thereby renders the blood incapable of giving oxygen to the living parts, which therefore die—die, that is, by a chemical process, which can be perfectly well imitated in the laboratory.

Again, in certain cases of fever, the blood undergoes a very peculiar change of appearance. In the natural state its colour is what the painter calls opaque—i. e., it looks bright by reflected light, but will not transmit light. In the diseased state its colour becomes transparent—i. e., it lets light through easily, but does not reflect it. It has that dead appearance which painters call laky. Until we knew the properties of cruorin this change could not be understood. Now we know that it depends on a chemical change which we can reproduce artificially by a variety of means. Knowing, too, that this change is of such a nature as to unfit the cruorin for its purpose, and knowing that that purpose is inseparably bound up with the maintenance of life, we see at once how great must be its significance.

I need not trouble you with further examples. I have said enough if I have succeeded in convincing you that the sciences of chemistry and physics are to the medical man neither ornaments nor instruments of education—i. e., studies undertaken for intellectual discipline (although in this respect they surpass all other studies). Still less are they subjects to be got up for examination. They are of value because the elementary thoughts and words of medical science are derived from them—so entirely, indeed, that he who is ignorant of "physical phenomena" is incapable either of forming adequate conceptions of the changes and movements which go on in the world of his own organism, or of describing them in intelligible language. But with respect to both subjects let me enforce on your attention an important principle for your guidance in study. Make it your aim that your study should not be extensive, but thorough. Do not set much value on getting up facts, but rather on understanding principles. Both as regards physics and chemistry, and as regards the preliminary study of mathematics (which, by the way, no medical student ought to neglect), do not try to go far in any of them, but do try to master what you learn. For your purpose, the storing up of words and unconnected facts in your memory is of no manner of advantage. Your object is to acquire the use of methods—above all, to become conversant with that one method by which all human knowledge has been obtained—the method of searching out the secrets of nature by way of experiment—the method of drawing out axioms from observations, by ascending uniformly and step by step from one principle to another, until at last we reach those more general principles which we are in the habit of calling *laws*. Now, the only way in which you can become conversant with natural laws is by making yourselves familiar, not with the words in which they are expressed or formularised, but with the processes of thought by which they have been discovered or established. To do this you must follow out step by step those speculations by which the great masters of human knowledge have worked them out. Next to investigating oneself, the highest intellectual pleasure one can enjoy, the most invigorating mental occupation one can engage in, is to accompany, as it were, another greater mind in the process of investigation; and for this enjoyment the study of the natural sciences affords the only opportunity.

At the same time that you engage in the alluring studies of chemistry and physics, you will have to set to work to learn Descriptive Anatomy. To the active and speculative mind it is not nearly so attractive. Intellectually, it is the easiest and simplest of studies. It demands memory, attention, and a laborious perseverance in work, which you will find to be of great value in after-life. To the idle man I need not say that it is as profitless as any other part of his medical education. Of school studies, it is more like that of geography than any other, and it calls for the same faculties. In geography, you set to work by considering the shape of a continent, for which purpose the best plan is to draw it; next, you learn the shapes of the countries which form its constituent parts; then the positions of the towns, the courses of the rivers, and finally the roads and railways. All this is a process in which the highest faculties of the mind are scarcely engaged, but other faculties of great value are well exercised. So it is in descriptive anatomy. It is not a science, and does not pretend to be; for it deals only with things, and has nothing to do with their causes. The process of learning anatomy is not intellectual, nor is it merely an exercise of the attention and memory. Another faculty is called into play—the faculty of appreciating and conceiving of form, of realising the local relations of objects. This faculty, though not a very exalted one as compared with those higher endowments of the imagination which are united with it in the arts of painting and sculpture, is of much practical value to the physician and surgeon; for it is by this power of realising conceptions of form that the physician is enabled, when examining the living body for the purpose of ascertaining the seat of disease (whether by inspection or by what we call palpation), to realise the parts which

lie below the surface. Thus a good medical anatomist, when he explores the chest, sees, as it were, the beating heart and the orderly contractions of its auricles and ventricles—the up and down movements of the lungs as they expand and contract in respiration—even the onward movement of the blood-stream, the crimson blood of the great veins, slowly labouring to the right side of the heart, then receiving its charge of oxygen and changing its colour in the lungs, and finally being driven off in an impetuous scarlet torrent along the aorta. It is this habit of realising what is below the surface—of seeing and feeling the internal organs as plainly with the eye and hand of the mind as if the body were transparent—which is the real use of descriptive anatomy. In our course of instruction it forms only one section of the subject, that which comprises medical and surgical anatomy; in addition to which you have to learn a vast number of details, burdensome to the memory, but unfortunately necessary for the passing of your examination.

I proceed a step further. We have hitherto concerned ourselves with dead matter only; we now proceed to living. We have considered those material changes which go on in the world around us; we have now to study those that occur within us. For just as in the great world around us, change is incessant, so it is in the miniature world of the living body. The anatomist disregards this. He looks at the body as if it were dead and motionless; and so should you so long as you remain in the dissecting-room; but when you turn to physiology and pathology all is change and movement. Now we have seen that the study of the change and movement which goes on outside of us is called physics and chemistry; so the study of the similar changes which go on inside of us and of other living beings is called *vital* physics and vital chemistry. The two together form Physiology.

The fundamental idea of Physiology is this: that the same laws which prevail in inorganic nature prevail also in the living organism; that the causes or forces which operate on matter outside of the body, and bring about its movements and changes, operate in precisely the same way in the body. The result of this is, that when you begin to study physiology, already knowing the laws of physics and chemistry, you have merely to apply those laws under new circumstances.

Thus one of the most important laws or generalisations of physics is that according to which there is a constant and invariable relation between the quantity of material which undergoes molecular change and the quantity of force generated. Thus, for example, in the working of the steam-engine the amount of work done in a given time cannot by any possibility exceed a certain known proportion to the amount of fuel expended. By perfecting the machinery—by economical modes of working it—by precautions against waste, you may approach this proportion more and more nearly, but never exceed it. So with regard to the movements and changes which are constantly going on in the body the same principle holds true—i. e., modern research has shown (so far as it has gone) that the amount of work done, of effect produced, is everywhere in exact proportion to the amount of chemical change—to the quantity of matter thrown out of combination, or, as we usually say, disintegrated. This being the case in all the instances (and they are now numerous) in which the experiment has been made, we are justified in believing that it must be so as regards the rest—i. e., in believing that wherever force is manifested there matter undergoes chemical change, and that the law is of universal prevalence, applying at all times and to every function, whether in disease or in health, in life or in death.

Another great fact in physiology is, that all the changes of matter which constitute the process of life are alike as regards one most important chemical change; and their physical results (i. e., the forces which are generated by them) are of two kinds, which have a close and well-ascertained relation to each other. That is to say—

(1) Every vital process (or function) is attended with and (in a sense) consists in the combination of oxygen with some oxidisable material—i. e., with some form of matter in which the antagonistic forces inherent in the component elements are so nicely balanced that they counteract or neutralise each other. Thus the formation of urea in the kidneys, of bile in the liver, of carbonic acid in the muscles, are all of them instances of the liberation of the force inherent in matter by the disturbing agency of oxygen. And if I were to go into the functions of other organs, we should find it to be the same throughout.

(2) The kind of result (movement) produced, varies according to the function, but is always of one of two kinds, or a mixture of the two. It is always either heat or mechanical work. This may be best illustrated by what happens in muscular action. Every time a muscle contracts, a certain amount of material is oxidised—not the material of its own substance, as we used to be taught when I was a student, but material separated by it from the circulating blood. That is, the chemical force inherent in a certain quantity of matter is set at liberty by oxygen derived from the cruorin of the blood-corpuscles, and thereby is converted into mechanical force, and shows itself in mechanical work, such as lifting a weight, grasping an elastic ball, &c.

The other kind of motion which is generated in the body is that which we recognise as heat. This also may be well illustrated by considering the phenomena of muscular action—a function which for illustration is preferable to any other, partly because its physical and chemical nature are well understood, partly because it is readily comprehended by those who have little knowledge of physiology. There are various circumstances under which muscular contraction produces, not mechanical work (which is of course its normal product), but heat. Thus, (1) outside the body, when I squeeze an india-rubber ball no mechanical work is done, but, in consequence of the compression of the air contained in the ball, a certain amount of heat is produced in it, which is in exact proportion to my exertion in squeezing it; or (2) if I push hard against a door-post, I produce no effect whatever on the door-post, but produce heat in my own body in exact proportion to my exertion. (3) Inside of the body, when the heart contracts upon its contents the whole of the work is converted into heat, the immediate cause of which is the friction of the blood against the sides of the vessels. Here a quantity of mechanical work is done, but is immediately converted into heat, and conduces to the maintenance of the temperature of the body.

In a similar manner I might explain to you how all the changes and movements which occur in the living body, whether they be chemical, like the fabrication of bile in the liver, or mechanical, like the movements of the heart and of the muscles, are due to the same powers, endowments, or properties of matter which we see in operation in the external world; and that therefore we are justified, not in speaking of chemistry and physics as the *handmaids* of physiology, but of physiology as comprehended by chemistry and physics—in short, in using the terms I have mentioned, in calling the whole subject vital physics and vital chemistry.

Perhaps this is the proper time for me to advert to a subject which does not come within my scope. I think there is a possibility that some of you who are listening to me, regarding rather words than their meanings, may so far misunderstand me as to receive the impression that when I speak of the powers of motion, and especially when I state that force is stored up or inherent in certain kinds of matter, that I mean to express any opinion whatever as to the way in which that force is stored up. The creative power—i. e., that power by which our own body first assumes its *form*, and then retains it unaltered through life—the power by which matter is transformed into living tissue—is, so far as relates to its nature and origin, altogether beyond the reach of observation—that is to say, beyond the reach and outside of the field of that inductive method of which I spoke as the only method by which man can discover truth. The way in which the forms of created things are modified by external circumstances may, indeed, and have been most successfully and fruitfully investigated by the greatest naturalist of our time; but as regards the question how the creative power itself originated, which has vexed the human intellect from the beginning of time, and will no doubt continue to vex it so long as time lasts, the science of vital physics affords no argument either for or against any of the speculations which have been advanced.

I pass to the next subject of medical study—Pathology. So long as the physical and chemical processes go on regularly and continuously the body is in health; from the moment that they are interrupted or disordered it is diseased. The study of these interruptions and disorders is pathology, and constitutes the very kernel of medical science—the blending-point of the practical with the scientific—of experience with speculation. Obviously pathology must be understood to comprise, not only those disorders which are produced by accidental causes, and which are strictly called disease, but those disorders also which we intentionally produce by the administration of drugs or by the performance of surgical operations,—for, as regards the nature of the disorder, the question of intention is evidently immaterial. It owes its title to be regarded as a science, not to its consisting of knowledge about disease; for, as I have already pointed out to you, there is an immense mass

of knowledge *about* disease, called medical experience, which, so to speak, contemns pathology, altogether ignoring its teachings, and rightly refusing to be guided by its laws. Pathology owes its scientific character exclusively to its forming a part of physiology—to the evidently rational assumption that disorders cannot be understood without a previous knowledge of order—that the abnormal can only be known by comparison with the normal—the absence of a thing by what it is when present; in short, the negative by the positive.

The discredit of pathology as a science lies in this, that it has as yet done so little for practice. The history of our art shows that every great progress or discovery which has been made in vital chemistry or physics has tempted physicians and surgeons to neglect and disregard the safe guidance of experience in order to apply the new truth to the cure of disease; and that, although practice has ultimately benefited by such attempts, from their extending the field of experience, the immediate result has hitherto, as a rule, been failure. Of this there is no difficulty in finding a sufficient number of examples if I had time. Thus we have all read of the enthusiastic hopes which were entertained when, in the last century, the properties of oxygen were discovered, that it would prove a universal restorative and antidote—hopes which even now are not extinct, as we can see at any moment by turning to the advertising columns of THE LANCET. Again, we can ourselves remember the confident anticipations of many as to the probable practical results of the discovery some thirty years ago of the vesicular constitution of living tissue; how it gave rise not only to a cellular pathology (which, being founded on scientific investigation, still holds its ground), but to the notion of a cell-therapeutics, happily obsolete. Or to refer to more modern instances, we all know how a scientific foundation for methods of treatment originally empirical has been sought for, in the physiological fact that the minute arteries are muscular, and that their contractions are regulated by certain nerves called vaso-motor, it being assumed that in certain diseases the arteries leading to particular organs are in a state of spasm, and that the circulation is thereby obstructed or interfered with. Many other misapplications of scientific truths might be mentioned, some of which have been of rapid growth and short duration, while others, by reason of the kernel of truth they have contained, or rather perhaps because, although ostensibly scientific, they have in reality been founded on experience, have lasted longer, and have exercised a more or less permanent influence on practice.

Why does it generally happen that the attempts of pathology to guide practice are failures? There are many reasons. One very plain one, but not the principal one, is altogether personal. It consists in this: that those who have theorised about treatment have had recourse to science rather to justify a preconceived notion—an *idolon* of the cave, as Bacon calls it—a crotchet secretly harboured in some cavern of the intellect, than for the purpose of faithfully, honestly, and I may add humbly seeking her aid.

No wonder, then, that Practical Medicine is so ready to exclaim, Save me from my friends; and that, just as Sydenham, 200 years ago, had a great horror of what he called the Medicine of Philosophy, so we find a distinguished practical physician saying only the other day, in his address on Clinical Medicine at Oxford, that as in ages gone by Hippocrates had to vindicate the study of disease from the inroads of superstition, so at the present day we have to guard it against assaults on the side of science. If, as the context seems to show, we may be permitted to substitute for the "study of disease" "the study of cases, or medical experience," we may, I think, fully admit the truth of Dr. Gull's observation.

In so far as the failure of science to advance practice is dependent on ignorance on the part of those who have attempted to use it, the fact affords a powerful argument, not for discarding physiological studies, but for pursuing them with much greater earnestness. But this incompetence is certainly not the only, nor even the principal, reason why all such attempts have failed. The real reason lies in the incompetence of the science of disease itself. At some future period—a period, I am confident, very much nearer at the present moment than it was when any of your teachers began their studies—the physics and chemistry of health and disease will be inseparably united. But as yet this is not the case. It is only a few diseases that we as yet understand from a physiological point of view—that is to say, with reference to the physiological processes or functions of which they are perversions. So, also, as regards remedies. There are only a few drugs whose mode of action (that is, the way in which they influence the physical and chemical changes which constitute life) we comprehend. Manifestly, the power of science to help practice is restricted within corresponding limits. To attempt a scientific treatment of diseases which science does not comprehend, is as unreasonable as it is mischievous. To be guided in our selection of remedies by theoretical speculations, or by imperfect investigations, is a most injudicious interference with the supremacy of experience, and can only tend to delay the progress of medicine.

Notwithstanding all this, I do not hesitate to avow my conviction that from the past the future is not to be judged. The supremacy of experience, of which I have spoken, must some time most certainly give way; or, more truly, experience must some time divide the sway with science. And when I look round at the amazing progress which vital physics, chemistry, and physiology have made within the last six or eight years—I may even say, within the last four years; the immense number and energy of those who are working, not in the miserable desultory way that I referred to a while ago, but in hearty earnestness; when I consider the importance of the discoveries which have been made, and the directness of their bearing on pathology,—I cannot doubt that now, at last, a new era is approaching, and that, although we your teachers may not live long enough to see it, you who are just entering on your medical career will both witness and participate in great changes in medical practice. To advert to the considerations which seem to me to make this probable would take much more time than is at my disposal. I must content myself with a bare enumeration of some of the directions in which it seems to me that science has either already progressed, or is likely to progress, towards its application to practice or art.

Twenty years ago the doctrine of animal heat was confused and unsatisfactory. It was clearly understood that the heat of the body was due to oxidation, but where and how was uncertain. It was indeed generally held that what was called effete matter was conveyed by the venous blood to the lungs and there consumed, so that these organs were comparable to a hearth on which combustion was in constant progress. With this conception another fitted in, which certainly had a considerable influence in pathology; that, namely, of the perpetual molecular disintegration of the body. We used to be taught (in my day) that the life of an organ, and hence of the whole body, consisted in a process of perpetual building up and breaking down of the minutest elements of the tissues; as if every cell, every muscle-fibre, every nerve-fibre, instead of being as permanent as the organs of which they form part, were constantly being destroyed or disintegrated—i. e., converted into that effete matter of which I have spoken.

Now, we know that the mode in which heat is produced in the body is the same as that by which it is produced out of the body, and that wherever life, or chemical action, or internal mechanical work is going on, there heat is evolved, not at the expense of the tissue, but of materials brought to the tissue from without; that so far from the lungs being the chemical laboratory of the body, less chemical work is done in them than in any other internal organ; that in those organs in which most chemical work is done, it is accomplished neither by the agency nor at the expense of the cells of which the organ consists, but by the living surface (itself, in truth, in one sense a part rather of the nervous system than of the organ) which separates those cells from the blood.

Again, we have learnt that the maintenance of an even temperature in the body depends partly on the velocity of the circulation, but mainly on the relative quantity in which it is supplied to different organs. We have learnt that (*quoad* heat production) the organs may be divided into heat-producing and heat-losing organs; that the heat-producing organs are all those in which chemical or internal mechanical work is being done—the liver, kidneys, glands of all sorts, and bloodvessels; the heat-losing, those in which no such work is done—the lungs and skin; and that in proportion as blood is sent to the former or to the latter, its temperature, and consequently that of the whole body, is depressed or raised. Only within the last two years the discovery has been made that a nerve (always believed to have important duties, but of which the real functions were till just now unknown) regulates this distribution, and thus governs the temperature of the body.

But it may be asked, Of what advantage is it to practical medicine that all this should be understood, or that we should know that the regulation of temperature is under the supreme control of one nerve? In reply, I would beg you to bear in mind that two of the most important conditions of disease consist in perversion of the heat-producing process: I mean fever and collapse. In fever, the formative or plastic power is paralysed; less chemical force is stored up, and hence less heat

disappears or becomes latent in a given time. In collapse, on the other hand, less heat is disengaged or liberated from the general paralysis of all the chemical functions. I am perfectly ready to admit that the understanding of these conditions will not enable us to control the progress of those diseases in which they occur, as, for example, cholera or typhus; yet it is reasonable to hope that it may be of material use in aiding our efforts to ward off the fatal termination.

I have occupied so much time in this illustration that I must shorten to the utmost my reference to others.

The investigation of the electrical conditions of the body, particularly those of nerve and muscle, hitherto rendered so difficult by the imperfection of the means of research, has very recently been wonderfully facilitated by the introduction of new instrumental methods; and it is remarkable that these improvements are due not so much to the efforts of physiologists as to those of telegraphists—the very same methods of precise investigation to which, or rather to their inventors, we owe the success of the Atlantic cable, being available, with scarcely any modification, for the measurement of the electrical changes which are bound up with the life of muscle and nerve, and eventually for the solution of the long-standing problem of the relation between electrical and nervous action.

Again, our knowledge of the mechanical movements of the body, particularly those of the heart and muscles, has advanced to an extent of which few persons, even of those who are conversant with medical literature, have any conception. Thus, in addition to the very precise knowledge which has been recently acquired as to the chemical changes which occur in muscle when at work, discoveries have been recently made as to the physical condition of muscular movements, which enable us not only to understand the relation which exists between different kinds of muscular acts (e. g., between those of the heart and those of the voluntary muscles), but to substitute precise ideas founded on the application of exact methods of investigation, for the confused notions which before existed as to the nature of those perversions of muscular action which occur in disease. Again, it was known twenty years ago that the frequency of the heart's action was influenced in some way by the nervous system. Now, we know how this is accomplished—that is, we know that to a certain nerve is assigned the duty of accelerating the heart beat; to a certain other, that of retarding it; neither having any influence on the amount of work done by the heart in a given time. These discoveries cannot fail to be of value both in pathology and in the investigation of the mode of action of drugs. I venture to illustrate the latter of these uses by a single example.

You have all probably heard of digitalis or foxglove as a medicine which has been used for the last hundred years in the treatment of diseases of the heart. As to its value, medical experience is unanimous; but as to its mode of action, opinions are contradictory. Many researches have been made, and innumerable animals sacrificed in experiments; but the question is still unsolved. It is presumed that digitalis influences both the force and frequency of the heart's action; but in what proportion is as yet undetermined. The reason is that hitherto physiologists have been unable to say how either the amount of work done by the heart in a given period or the distribution of that work in time (the frequency) was regulated in health. Now that both problems have been solved by the brothers Cyon, the research as to digitalis may be recommenced with good hope of success.

There is one among many other methods of fruitful pathological research I might refer to (by way of further illustration) which I cannot pass over—namely, that which has been lately designated comparative pathology. I have already spoken of the rich harvest of results gained by the synthetical method in chemistry. There is also a synthetical method in pathology. A disease presents itself to us clinically; we have to analyse its phenomena, and reason from them to their causes. There is a method by which you reverse the process. Granted that you have already some knowledge of the cause of a disease, you aim at extending and correcting that knowledge by experiment. Experiments, of course, must be made *in corpore vili*—i. e., on the lower animals. As regards those diseases which can be produced in animals, and spring from recognised material causes, this method has already borne much fruit, and will in future yield much greater; for every day the extent of this field of inquiry is being increased by the discovery of new morbific agents.

I trust that no one will assume, from my having devoted almost the whole of my address to the scientific method of studying disease, that I am without a just sense of the dignity and value of experience. Assuredly more honour is due to the empirical method than to the scientific; for up to the present time practical medicine has been advanced by men who have devoted their lives and energies, not to studies in the laboratory, but to studies at the bedside and in the post-mortem theatre. The end I have had in view has been to show that future progress is to be looked for in another direction—viz., in the independent development of pathology, not as a branch of medicine, but as a section of physics and chemistry, and in the diligent and skilful application to its questions of the same methods as are in use in those sciences. But let it be clearly borne in mind that pathology will never supersede the absolute necessity of experience as the one thing needful to the medical practitioner. In the future as in the past, the greatest physicians, surgeons, and obstetricians of their time will be found among those who do what Bacon says the doctors of his day so much neglected—those who emulate "the serious diligence of Hippocrates, which used to set down a narrative of the special cases of his patients, and how they proceeded and how they were judged by recovery or death."

Abstracts
OF THE
INTRODUCTORY LECTURES
DELIVERED AT THE
VARIOUS MEDICAL SCHOOLS OF LONDON
AT THE
Opening of the Session 1868-69.

ST. BARTHOLOMEW'S HOSPITAL.

INTRODUCTORY LECTURE BY MR. THOMAS SMITH.

AFTER a few preliminary remarks and some words of greeting, the lecturer addressed the new students as follows:—

"That you may study your profession aright and practise it worthily, I would have you think of it nobly, and, now if ever, justly to appreciate its dignity. It may seem to you, as I dare say it did to me when I for the first time sat on those benches, that you have chosen as a means of livelihood a profession as good and perhaps better than others. You look now, as I did then, at these things from a distance; but believe me that a nearer view, and a more intimate acquaintance with your life's work, will make such of you as are in earnest regard it with very different feelings. Is it nothing to us, gentlemen, that He whose name I scarce dare mention here, when in our nature, deigned to be called one of our craft, and by his superhuman cures of disease chose chiefly to attest his divinity? Is it nothing to us that, notwithstanding the delusion of a few amiable women and perhaps some fools, the practice of our profession engenders and fosters within us true humanity, helpful sympathy, and Christian charity, as motives of action; and that though pity, as a mere emotion ending in sighs and tears, fades away, yet the brighter gifts and graces of our human nature are purified, refined, and strengthened by frequent exercise.

"I count it no drawback that our profession exacts from us even laborious work, since the primeval curse pertains not to work like ours; and He who, as part of that curse, condemned man to get his bread by the sweat of his brow, has in these later days mercifully remitted this part of our punishment. He has even brought it about that idleness should be a curse—a sin and shame, while the necessity of gaining our bread by the sweat of our brains is to all but the most ignoble natures an inestimable blessing—nay, even a keen and enduring pleasure. Nor do I count it any drawback that our profession is little likely to bring us wealth or high social rank; it will at least secure to ourselves and ours a competency, while it will gain us high rank in the esteem and love of our patients."

After some further remarks in the same strain, the lecturer proceeded: "Gentlemen, why do I tell you all this, and why do I thus, as it may seem, unduly magnify our office as doctors? Not surely that we may think more highly of ourselves, but that you may the more earnestly devote yourselves to your work, seeing how worthy of your highest efforts and a life-long devotion is the profession to which you have the happiness to belong. Medicine as a whole, as it comes to us in the present

day, is not a science properly so called, though it presses into its service many sciences. It has none of the exact laws of a true science, nor are its doctrines capable of demonstration. Medicine is an art—the art of healing, and though in the course of your work you will have to master some of the more exact studies, such as anatomy, physiology, and chemistry, it is none the less to be borne in mind, that these are but handmaids to medicine, and are subservient to the great object of your work, the aim and end of your profession—namely, the art of healing. This art, though broadly based on science, in its direct application to its legitimate object, the cure of disease, is mainly derived from empiricism—that is, observation and experience. The true artfulness of our profession consists in the skilful application to the cure of disease of all means that are supplied us, whether by science or empiricism.

"The art that you are about to learn will in its practice require chiefly the exercise of the higher intellectual gifts, but you will have to cultivate in no mean degree the more material faculties of sight, touch, hearing, and the muscular sense. And this is no small advantage, since all useful knowledge that you may have been at the pains to acquire, and even many accomplishments, may be turned to good account; while the muscular precision and the quickness of hand and eye acquired in school games and field sports, will find their uses in the practice of your profession. Begin your work here with the thorough determination to do your duty as Christian gentlemen and earnest students; cherish an admiration for honest hard work, and you will soon learn to love it, and will appreciate its true dignity and helpfulness; hate and despise idleness, for you will soon see its accursed folly and helplessness. So will you best supplement and strengthen those principles with which your home teaching has supplied you, and to which you must turn as your chief safeguards and supports in the trials and temptations which will surround you as young students."

The importance of a careful and considerate choice of friends was pressed upon new students, and the advantage of combining practical with systematic work was insisted on. Students were urged to question their teachers freely, and not to depend too exclusively on their help. Attention was drawn to the disproportion between the increasing requirements of examining boards, and the restricted period of studentship, and students were cautioned against making the passing of their examinations the only object of their work. Advanced students were advised to study the natural appearance and healthy action of such parts and organs of the body as admit of examination, upon their friends, and upon them to learn the use of the laryngoscope, the stethoscope, and the ophthalmoscope. "You will thus," said the lecturer, "quicken your powers of observation, and will the more readily notice deviations from the standard of health. You will have learnt the very alphabet of the language in which the body makes known its wants and disorders, the language in which you are hereafter to read the diseases of your patients—namely, the language of symptoms. Symptoms have been aptly termed the body's mother tongue, a tongue in which it often cries aloud in disease, and with no uncertain meaning to those familiar with the voice; and this mother tongue you must study and learn to understand, not only its plain outspoken words, but must be able to gather meaning, it may be, from a few broken inarticulate whispers."

Mr. Smith insisted on the necessity and advantage of undergoing the training of clinical clerkship and dressership. Young surgeons were reminded that though a diploma legally justified all in pursuing their calling, yet that it in no degree diminished the moral responsibility of its possessor; nor did it release any from a studentship which should be lifelong. The importance of promptitude in the practice of medicine was dwelt upon, and all were urged to become either house-physicians, house-surgeons, or assistants in private practice before undertaking the more serious responsibilities of their profession. "Our chief duty as medical men," said the lecturer, "I conceive to be to do all in our power for the welfare of our patients, and this devotion to their interests must include all means of alleviating suffering that medicine, morality, and manners afford. In your intercourse with the sick it will be greatly for their comfort and your advantage that you should cultivate a natural, quiet, and kindly manner, and that you should avoid the eccentricities of behaviour which are said to have characterised some of the masters of our art. Bring also to the bedside of your patient a 'cheerful countenance and pleasant words, which are sweet to the soul, and health to the bones,' and if possible that 'merry heart which doeth good like a medicine;' and, as was said by one who was both philosopher and physician, 'ever let your manners or *mores* be but the expression of the habitual frame or *mos* of your minds.'"

The propriety of exercising a becoming reticence concerning the ailments of those entrusted to their care was urged upon young surgeons. The disappointments of early professional life were spoken of; and attention was drawn to the innate tendency to heterodoxy existing in certain minds, and to the thirst for lying wonders that such minds exhibited. Mr. Smith then referred to Bacon's views on the fallacy of judging of the skill of medical practitioners entirely by the results of their treatment of the sick. The duties of medical men to one another were briefly sketched.

In conclusion, the lecturer spoke as follows:—"I said just now that our manners should ever be but the expression of the habitual frame of our mind; and the habit and temper of mind which should animate us in our ministrations to the sick I can in no way so well describe as by reverently paraphrasing the words which so expressively tell us of the Divine Physician's tender care and true sympathy for us in our soul's sicknesses—namely, we must be touched with a feeling of their infirmities. The refining and elevating influence of such true sympathy will keep us from ever making our noble office subservient to any ignoble end; and though it may interfere with our becoming rich, yet it will raise us into a higher and purer atmosphere, above the petty vexations and disappointments of professional life. For what if by our work we become neither rich in worldly wealth nor great in the world's esteem? Surely a good name is rather to be chosen than great riches, and loving favour rather than silver and gold. And though we may achieve no social distinction, we may, by the Divine help, one day find, as many have found who are now gone to their rest, that the conscientious discharge of our duty in that profession which brought us neither wealth nor rank, has been to us none other than the house of God—aye, and the very gate of Heaven."

CHARING-CROSS HOSPITAL.

INTRODUCTORY ADDRESS BY DR. POLLOCK.

THE lecturer, after a few words of welcome to old and new friends on the occasion of their again assembling for the winter session, and some observations in favour of the custom of giving introductory lectures, observed that the study of Medicine was one of the greatest interest, involving as it did a knowledge of chemistry, physiology, botany, and other sciences. Doubtless there were dry matters of detail to be mastered, and many difficulties to be overcome; but even these became pleasant and easy as proficiency in them was attained. The bedside itself was a source of the greatest interest to the practical physician and surgeon, and there was an amount of pleasure and enjoyment to be got out of the practice of medicine equal at least to that to be derived from any other profession. It was certainly a very arduous calling—one requiring much patience and self-denial, and success in which could only be attained by real honest work. As a profession, medicine at present held out few prizes, even to the most successful; and often the only reward for much anxious care and attention was the grateful thanks of the poor patient and his friends.

The lecturer urged upon the students to make the most of their early years of student life, by attending diligently to the lectures on the various subjects, and keeping up with them by reading in the text-books. At the same time the student should look about him, and make use of his own observation to confirm the views laid down by lecturers and books.

Dr. Pollock alluded to the extreme views that had at different times been taken as to the treatment of disease; such as the excessive bleeding and inordinate use of mercury in former times; then the overstimulating by brandy, which was so much in vogue a few years ago; and expressed an opinion that probably the best treatment lay between such extremes.

It was necessary in studying medicine to give a fair share of attention to each subject, not letting any one course of lectures engross the time of the student too much, lest it should lead to the neglect of some less congenial but equally important matter. Regular habits of study should be acquired, and never broken into, and work should be made the chief and foremost pursuit of the day. When a difficulty arose, its solution should, if possible, be sought at once, while it was fresh in the memory, or it might be forgotten and turn up again at some inconvenient time.

Dr. Pollock insisted upon the great value of accuracy to the medical man, as it was better to know nothing on a subject

than to be misinformed. The system of "cramming" was a very bad one, for it was quite insufficient to teach a profession in which the first physicians and surgeons were still students. While attending to the mind, it was necessary not to neglect the body, especially to those who would be called upon by-and-by to take charge of the health of others. A certain amount of recreation and holiday was desirable, and in some cases absolutely necessary for the well-being of the individual. Excessive mental application enfeebles the mind quite as much as excessive physical exertion weakens the body, and rest and relaxation are equally necessary for both. To be always at work was very likely to impair the quality of work done—no small consideration; besides which it was against the laws of nature, whose code could rarely be infringed with impunity. No doubt this advice was very old and stale—so much so, that everybody seemed to have forgotten it in this age of eager competition.

Dr. Pollock then alluded to improvements in the hospital and school, and changes in the medical staff, which he hoped would materially assist in the prosperity of the institution.

In looking at the profession at large it was gratifying to observe an increased appreciation of medical work, especially in the shape of hygiene and sanitary reform. The treatment of disease was beginning to receive more attention than formerly, and the establishment of the Clinical Society was a great feature in the past year.

Much attention had been called of late to the action of various drugs; and the labours of Dr. Anstie in the investigation of the uses and action of alcohol, and Dr. Harley's lectures at the College of Physicians on conium, hyoscyamus, and belladonna, as well as the experiments of many other eminent men, were of the highest value. The successful administration of morphia by subcutaneous injection led to a hope that other medicines might be given with advantage in the same way. The busy medical practitioner might not be able to devote himself to any special scientific investigation, but he might readily add something to what is known of the action and uses of different medicines, and to such a good work Dr. Pollock, in conclusion, commended his hearers.

GUY'S HOSPITAL.

INTRODUCTORY ADDRESS BY DR. MOXON.

THE lecturer, after alluding to the strong varieties of character which are brought out by necessary habits in the several branches of social usefulness, laid this down as the distinguishing character of a profession as contrasted with a trade, that every member of a profession directly uses general principles in the practice of his profession. A medical man, especially, must be capable of exercising judgment when decisive and conclusive motives are not present. Hence he strongly urged on students the necessity of maintaining their minds free, and capable of independent action. "For the licensing bodies now demand a vast extent of knowledge in candidates for diplomas; and much knowledge, cast hurriedly into the mind, will be too likely to smother young intellects, as too much fuel smothers scarcely kindled fires. Men are a preposterous race, doing things hind-side-before: we first talk, and then we learn grammar; we first reason, and then learn logic; we learn much before we think what sort of a thing it is to learn." He would have them now be beforehand, and, as they were to plunge into so many sciences, consider what it is to learn. "1st. It is not storing into capacities, though many of our expressions imply that it is so, and some young men seek a reputation for unfilled capacity, which is very foolish, since the mind is never greater than what it holds. 2nd. It is not receiving seeds of knowledge, for the function of the receiving mind is active—it is receptive activity. The mind receives learning as a germ receives pollen, and then arises new living thought, varying in different minds, and improving and propagating itself. Every mind is like a little Darwinian world, in which different ideas struggle for existence, and those best adapted hold their ground. Reason in the mind must take the place man has in nature, and must aid in the struggle those that are most profitable. Such being the relation of the mind to learning, how does the kind of learning affect the process? How are we to study Medicine?" The lecturer here entered on the question whether there are "sciences of medicine and surgery." He said true sciences are of three classes, and took as a type of the first, mathematics, which is pure reasoning; of the second, chemistry, which is reasoning from the facts of the chemical elements; and of the third, zoology, which is mere classification. He compared the so-called "science of medicine" with each of these types. "It is not like mathematics or chemistry, because each of these is constructive, the first of the elements of thought, the second of the elements of nature: and we have no constructive knowledge of diseases; we do not know how their elements are composed. It aims to be like zoology, but is disqualified because we cannot define a disease, and our knowledge of them is not comparable knowledge; for when one disease is a pain in the leg, and another disease is a growth in the stomach, and another a spider in the skin, they compare together as the solar spectrum and the key of C major would compare with essence of peppermint. Some people erroneously call anatomy and physiology sciences; but they are no more than common narratives of fact. The practical result of these reflections is that medicine should not be studied in books as sciences are studied. Learn diseases as facts in nature. Know them, not as the zoologist knows his genera and species, but as the hunter knows his leopards and wild boars. No writer or speaker can describe a disease. The best attempt is only like a landscape taken from a railway, or like the print of a glorious battle, where live struggle is chilled into dead shape. You must see individual cases for yourselves, and so know the history of disease from its biography. But should we then discard science? Assuredly the very opposite. If there is no discipline in the facts, you must bring discipline in your minds. Like a colonel of irregulars, the physician must be a genius of discipline over his disorderly facts. This is the true theory of medical education: we must have minds disciplined, yet free; and these opposite requirements must be supplied from opposite sources. Freedom you can only get from *yourselves*. The Medical Council will discipline you, cutting your garment of learning to their regulation model of a doctor. They carry their discipline too far; they fill every hour of your day. Yet what can they in their 'curriculum' offer you in place of that self-help for which they leave you no time. Your course of study will be in stages: layers of learning will have to be deposited on you like geological formations, or coats of paint; or you will be put together like a plaster image—the legs and body crumbling, while they make the head. Meanwhile take care of yourselves; see that you grasp firmly the principles of the knowledge you gain, though you cannot retain the details. Do not cram for your examinations. The examination is not your real trial: you only give *bail* there to appear before society, from which there is no appeal. This knowledge of principles through details can only come slowly; for your acquiring intellect is a point, which traces in single lines that vast chart by which you must pilot your future patients." Dr. Moxon urged them to learn to observe well; to study anatomy practically, for that affords the best practice in observation. Medical literature should only give them the meanings of names; their eyes must show them the nature of things. "When medical literature goes beyond what we can all see, it gets contrary and uncertain. There is only one way in which we can avoid being deceived by it, and that is by observing for ourselves; so that we can keep a check upon the writer, and follow this rule: *never trust a man for what he cannot know*, which would do away with 'opathies and theories. Faith may lead us; but Reason must guide us. The place of reason is above and behind faith; for our oracles are uninspired.

"As to medical progress—there is no such thing as progress, except for conveyance from place to place. All improvement is development. We must not leave what is behind, and we have no mark to press to. It is because physicians press after great aims that we make so little advance in our development. For when the facts we see do not promise to fulfil the aims we have, we turn away from the facts, and guess our way towards the aim, and call the guesses 'theories,' to make them respectable. Beware of medical theories: they are images made out of a little dust of facts, into which someone breathes a little puff of himself—a breath of life that's not divine; and they fall to pieces again when they have served their maker's purpose, and are blown about the desert dust of medical literature. Do not guess: a guess is the squeak of reason oppressed by doubt; it no more helps reason than cries lessen pain. Be patient under doubt; do not let it make you guess in haste. Remember the danger of generous minds, which is this: that in striving to know what cannot be known, they leave unknown what they might know. We live not to an aim, but to a duty of observation and guidance. The aim at cure spoils our social reputation. Those minds that are shaken by sickness or by anxiety suppose that we can cure them, and we allow the supposition. But when they come to themselves

they change their view, and give nature the credit, and despise us as pretenders; just as their day-enlightened forefathers drowned those very witches whom they shuddered at in the dusk. The public will not forsake you. It is not hope, but fear, that caters for the doctor. Let us patiently discharge our noble duty of observers and guides, striving to be to each individual sufferer under our care all that a man can be to his fellow-man in sickness, and no more.

"We shall try to make you learned—a *vir doctissimus et ornatissimus et clarissimus*. Now remember, while you are getting all the fashionable learning, that the newest patent clarified candle may give no better light than a well-managed dip; and that you live to do duty, not to be admired. Get firm possession of that sort of knowledge which your daily usefulness will keep bright by activity, and add to it all the accomplishments you can acquire. In your noble profession no personal excellence is lost, but rather will help you in your wide range of duty, which requires you to create faith and hope, and to find fresh interest for the weary of life, and not merely to know things of which other people are ignorant."

KING'S COLLEGE.

DR. GUY'S INTRODUCTORY ADDRESS.

AFTER some preliminary remarks in reference to the recent retirement of the late principal, Dr. Jelf, who for nearly a quarter of a century had administered the affairs of King's College, and the assumption of office by Dr. Barry, Dr. Guy proceeded to say that in making choice of a subject he was naturally led to reflect on the custom by virtue of which they were brought together—the custom of opening the winter session by an introductory lecture. "My own experience of the profession," continued he, "extends back more than forty years, and I have no recollection of a time when this custom did not prevail. At the medical schools attached to our large hospitals, no less than at the private schools, the teachers met the pupils face to face, and some member of the staff (a man perhaps of European reputation) opened the business of the session with a lecture, introductory, it is true, to his own course, but speaking on behalf of his colleagues and himself, addressing to the assembled pupils words of welcome, explanation, advice, caution, encouragement. This was the origin of the introductory lecture. And yet the lecture of to-day is something different from the lecture of forty years ago. The lapse of time has brought with it the same sort of changes which we see at work in so many other directions. The lecturer is no longer addressing himself solely to the audience that he sees before him. With the establishment of the first weekly journal this privacy passed away, and in the number of THE LANCET published on the 9th October, 1824, we find a very full report of the 'Introductory Surgical and Medical Lectures delivered in London' in that month of October. Mr. Abernethy gave the lecture at Bartholomew's; Mr. Green (a name well known and greatly respected among the professors and at the Council board of this College) lectured at St. Thomas's; Mr. Headington at the London Hospital; while Mr. (afterwards Sir) Charles Bell, Mr. Guthrie, and Mr. (afterwards Sir) Benjamin Brodie, upheld the credit of the private schools. Nor did the process of development stop here. The organs of public opinion—the daily newspapers—bethought themselves that, for our profession, numbering some twenty thousand members, with numerous alliances and still more numerous clients, the 1st of October was a sort of festival day, and that its doings on that day were at least as deserving of public recognition as the prowess of sportsmen on the 1st of September, and that our opening lectures might prove as well worth reporting as the addresses and speeches of the associations whose proceedings fill up so opportunely the awkward gap between one session of Parliament and another. But, be the causes what they may, the fact remains that the public at large are believed, by those who are the best judges of their wants and wishes, to feel an interest in the proceedings of this day. On careful consideration, I can find one suitable topic, and one only. I mean the great subject of Education, as illustrated by our medical usages and experiences; and this topic I have chosen."

Dr. Guy then proceeded to sketch the course of study demanded of the medical student at the present time to fit him for the emergencies of practice, and to point out that medical education has come to be what it now is by no sudden creation, but by a growth, slow and gradual—gradual in all its branches, no less than in the whole tree. There had been pruning of decayed limbs here, grafting of new and vigorous buds there, but continuous growth and development everywhere, and, as a final result, an interlacing and blending together of several independent growths into one goodly clump.

Dr. Guy continued: "It will certainly be interesting, it may be useful, to justify these statements by examples.

"I will begin with the examining and licensing bodies. Well, exactly three centuries and a half ago (in 1518), the College of Physicians was founded, the Barber Surgeons having been incorporated more than half a century (1461), and the Surgeons just six years (1512) before them. How learned and how liberal the founder and first elects of the College of Physicians were; how they brought their learning and theology from Oxford, their physic from Leyden, Padua, and Bologna, and their wealth from church livings and preferments, or grants of abbey lands; how dearly they loved their profession; how tenacious they were of their rights over barber surgeons and apothecaries, insisting on directing the operations of the one and conducting the examinations of the other; how, in the forty-first year of their existence they graciously forgave Dr. John Geynes on his humble recantation, his heresy in impugning the infallibility of Galen—(strange lesson this in the matter of infallibilities);—how they received a Royal visit, and enrolled among their Fellows a Marquis of Dorchester and the Dukes of Montagu and Richmond; in a word, with what dignity, gravity, authority, they comported themselves, may be found written in many a page of authentic history.

"This, then, appears to have been our first examining body. I shall shortly have to speak of their relations with the barber surgeons; but at present shall content myself with showing that the three existing representatives of the medical profession, in a comparatively rude and undeveloped state, could be found consulting together and co-operating within a century of the foundation of the College. We see them assembled round the death-bed of Prince Henry, eldest son of James I., and we learn that 'physicians, chirurgeons, and apothecaryes' were dismayed and perplexed, and, driven as a last resort to a local application in the shape of a '*cock cloven by the backe and applied to the soles of his feet.*' I beg you not to forget that this happened no less than two centuries and a half ago—in the year 1612, just six years before the publication of the first London Pharmacopœia. But that you may not carry away with you too unfavourable an opinion of the consultations of the Faculty, and the resources of physic, let me remind you of another occasion on which—his Majesty King William the Third being the patient, and the munificent Dr. Radcliffe the physician consulted—the doctor was able to suggest a line of treatment which succeeded so well that a few months afterwards the king was able to fight and win the battle of the Boyne.

"Between the two ancient corporations of Barber Surgeons and Surgeons it would seem that such intimate relations had grown up as to give some importance to an event recorded as happening in 1745; I mean the dissolution of their alliance. At or about this date (about a century ago), we have indications of great activity on the part of the surgeons, thus happily emancipated; and we are not surprised to find that, in 1799, Parliament bought and consigned to their vigilant and skilful keeping the noble museum of John Hunter, or that the Crown granted them a charter in the year following.

"If I add that the Society of Apothecaries, in 1815, obtained those legal powers of which they have made, like the College of Surgeons, such good use for the promotion of sound medical education; and if I further remind you that a charter was granted to the University of London in 1837, and that at length, in the year 1858, the whole profession obtained a central representative and controlling authority in the Medical Council, I shall have sufficiently shown by what a gradual process of change and development our examining and licensing bodies have come to be what they now are.

"If you have found this sketch of the progressive development of our examining and licensing bodies interesting or instructive, I think that a similar quick survey of the rise and progress of instruction by lectures will prove acceptable.

"I have already intimated that the first teachings by lecture or demonstration were given by physicians, and that their first subject was anatomy. It was in the year 1540 that Dr. Caius, the founder of Caius College, Cambridge, was deputed by the College of Physicians to give anatomical lectures in the Hall of the Barber Surgeons,—a place chosen for this, among other reasons, that that corporation had had conferred upon them the right to claim every year the bodies of four executed

criminals. A more formal appointment appears to have been made by the College in the year 1596, when Dr. Paddy was chosen reader of the Anatomy Lectures, and from this time forward to about the middle of the eighteenth century, a succession of physician-anatomists, with such names as Harvey, Glisson, Mead, Willis, Lower, William Hunter, and Matthew Baillie among them, carried on an unbroken chain of anatomical teaching. Meanwhile some provision was made by means of endowed lectureships at the College of Physicians and Gresham College for teaching other branches of medical knowledge. The Lumleian 'Surgery Lecture,' founded in 1585, and the Gulstonian Lectures, best described as Pathological, 1632, and the lectures on Physic at Gresham College, prior to 1615, show that these subjects were not neglected.

"Coming down to more modern times, we find Dr. William Hunter succeeding Mr. Sharpe as Lecturer on Surgery to a class of naval surgeons. This occurred in 1745, a date of special interest, as it was then that the alliance between surgeons and barber surgeons was dissolved, and Dr. William Hunter established his celebrated anatomical school. But this venture of William Hunter's was by no means the first of its kind; for Dr. Hunter himself studied at the school of Dr. Frank Nicholls, who seems to have achieved a high reputation as a teacher of anatomy at Oxford about the year 1730, at which date he was admitted to the Fellowship of the College of Physicians. Of Dr. Nicholls's teaching we know this much; that he professed to teach anatomy, physiology, and the general principles of pathology and midwifery, in thirty-nine lectures; and we are told that Mr. Bromfield, a distinguished surgeon and lecturer at St. George's, comprised anatomy and surgery in a course of thirty-six lectures; while Mr. Nourse, at St. Bartholomew's, embraced '*totam rem anatomicam*,' in twenty-three.

"From about the middle of the last century to the present date, the history of medical teaching is one of constant and rapid development, taking place with accelerated speed from the first years of the present century, when College and Hall began to exercise their legislative powers, and to prescribe their respective curricula.

"I have not time to trace the rise and progress of medical teaching through the establishment of a series of private schools, founded by men conscious that they possessed special qualifications for teaching, competing successfully with the hospital schools, and, for a time, with the two Colleges, but succumbing at length to a combination of adverse influences. They had done a good work, and had had their day; and now in lieu of them and of the hospital schools with which they so successfully competed, we have nine hospital schools, and two colleges, with their hospitals attached,—eleven institutions in all, with means and appliances of teaching all things necessary to qualify the pupil for the general practice of his profession.

"If time had permitted, I should like to have said something of the growth and development of practical teaching in our hospitals. With regard to the hospitals themselves, it may interest some present to be told that the oldest hospital in which any clinical teaching could have taken place (a hospital for the sick was founded at Canterbury as early as the year 1070) did not come into existence till about thirty years after the foundation of the College of Physicians. I speak of St. Bartholomew's, founded in 1547. Six years later, St. Thomas's came into existence. The eighteenth century witnessed the establishment of five more (Guy's Hospital among the number), and the nineteenth of four, of which our own hospital is one."

Dr. Guy next dwelt upon the recent improvements in the College, and the part its professors have undertaken to do on behalf of the students, and what might reasonably be claimed from them in return.

He then observed—"As the subject of medical education is now attracting a good deal of attention, and as the office of Dean of the Medical Department, which I had the honour to hold for a term of years, gave me some experience, and led me to form some definite opinions on the subject, I will take this opportunity of stating what those opinions were and are. In the first place, I was alive then, and am still more alive now, to the objections that exist to the demand made on the student that he attend more than one course of the same lectures on the same subject. I would give one opportunity, and one only, for attendance on the same course, and I would make no exception, however important, or however hard to learn, the subject may seem to be. In the next place, I think that there is a grave objection to the immediate attendance on the practice of the hospital, now demanded of the student. In the third place, I think that, if possible, the attendance of surgeons and physicians at the hospital should be so arranged that the students who ought to be following the physicians round the wards, shall not be drawn away by the naturally superior attractions of surgical cases. But lastly, and above all, I attach importance to a plan which, in former years, I had many opportunities of recommending—that of beginning the education of the medical student in the summer instead of the winter. This change might be made to harmonise admirably with the plans of those who insist that some subjects comprised in the present medical curriculum (such as botany), should be taught to the student before he begins his medical education properly so called. If, in the three months of a preparatory summer course, botany, zoology, physics, and chemistry (such part of inorganic chemistry as might be selected for the purpose), and with them that part of anatomy known as osteology, were taught, the student might enter at once, at the beginning of the following winter session, on the practical work of the dissecting-room, and the six winter months of anatomical and chemical teaching, added to the three months of the previous summer, would supply nine months of instruction in those two important subjects. A preparatory summer session, with three subsequent complete years of study, and the abandonment of all duplicate courses, would give ample time for the deliberate study, by lectures, of all the subjects (public health, and perhaps medical psychology included), which it would be reasonable to require of the whole body of medical students.

"I must not pursue this subject further; for if I did, I should leave my programme incomplete. I have yet to say something of education as a comprehensive subject, embracing medical education as one of its subdivisions. I thought that some light might be thrown on the general subject by this special form of it; and it was for this reason that I entered into certain details of the rise and progress of our educational system.

"Much is being said just now about technical education; and there is a strong feeling abroad in favour of training all men alike in the principles of the art which they are about to practise. The designer, it is thought, should not take his lessons from one who may himself have contracted habits at war with every suggestion of good taste; but he ought to be carefully instructed in the principles which should preside over and direct every work of design, as well as in the most approved methods of procedure in the special art or manufacture to which he intends to devote himself. And in order that the art-designer may be so educated and trained, there must be museums of raw material, of manufactured articles, of successful and unsuccessful works of ornament. Taking this as a specimen of technical teaching, we say that our profession affords the oldest and most perfect example of such teaching. Or, if we turn to the art and business of the pharmaceutist—one entailing duties and responsibilities similar to our own, we can point to our old and approved educational system and methods of procedure generally, as worthy of the attentive study of those who are to constitute the examining body under the new Act. To those professions which have established voluntary examinations (I speak of the professions of the architect and actuary), and those which (like the civil engineers) have not yet instituted any examination at all, we think that we hold out an example worthy of imitation. We have long since recognised, and acted on, the principle that the public must be protected against ignorance and unskilfulness on the part of those who practise a profession, or follow an occupation, involving serious risk to life, by a good technical education and a searching examination. But we go farther than this, and pronounce in favour of a large and liberal education. When we prescribe a course of Botany, we do not allege that the practitioner of medicine will have constant, or even frequent, occasions of making practical application of his knowledge of plants at the bedside; but we look upon botany as a key which unlocks other knowledge, and as an admirable training for the faculties—so important to the physician—of observation, methodical arrangement, and lucid description: and just as we demand of the student, before he begins the study of medicine at all, proofs that he has had the liberal education of an English gentleman, though little of what he has learnt admit of any direct practical application, so we require of him, before he enters on the practice of his profession, a knowledge of science much exceeding that for which he can ever find a use. But then, we want him to be a man of science, that he may receive the respect of persons of every rank of society. But we have a better reason even than this: we honour science for its indirect as well as its direct applications.

We do not forget that it was Edward Jenner, a man remarkable for his knowledge of natural history and his love of it, who gave to us the great discovery, and to the world the inestimable boon, of vaccination; and with it the grandest example the world has seen of that principle and policy of prevention for which the future has, I trust, great triumphs yet in store.

"And now that I am near the end of this lecture, and look back to what I have said to you, I ask myself whether I have not been guilty of some abuse of terms in speaking of *education*, when I should have used the word *instruction*. If so, let me correct myself. There are two things which, as they are more or less associated in schools and colleges, are apt to be confounded the one with the other. The process by which masters and professors teach, and schoolboys and students learn, is properly called *instruction*; and this, partly by means of what may be called the incidents of it, and partly by the wholesome rules and regulations of the schools and colleges in which it is carried on, becomes *education*. In the village school, the child is *instructed* in reading, writing, and arithmetic, and the elements of our Christian faith; it is being *educated* by rules which prescribe cleanliness and tidy apparel, punctual attendance, the respectful recognition of teachers and superiors in age and position, just and kindly dealings with school-fellows, and the exhortations, reproofs, and punishments of the teacher. To these the very act of learning, through continuous, silent, painstaking application, contributes the important element of the childish self-denial implied in working when the occupation natural to the child's age is play. So is it with all good schools, and so with every institution where young men are trained for any profession or serious occupation in life. The class-room is a place of direct instruction in the thing taught; a place of training for the faculty or faculties exercised in the learning of it; a place of education in the degree in which any other mode of passing the time is preferred to it. It is this wholesome function of the class-room which is overlooked by those who think that young men should attend those lectures only that the teacher can contrive to make attractive. If this were so, Science would have to put off her sober garb, and exchange her severe graces for the meretricious adornments of the theatre; and, in lieu of many small and manageable classes, we should have a few crowded audiences very hard to please, and somewhat difficult to keep in any kind of order.

"There is another word or group of words which I have often used in this lecture, and possibly so as to lead to misconception. I mean the word *Science*, and its derivative, *scientific*. I wish it to be understood that I mean by *science* what it originally meant, knowledge; and by *a science*, a distinct and well-defined branch of knowledge: by *scientific teaching*, the imparting of real knowledge; by a *scientific man*, a man enlightened and well-informed in the subjects he professes to understand. But, as you are aware, there are some who pitch the meaning of the word Science so high that they will not allow Medicine to be called a science. It is not exact enough, not accurate enough, not sufficiently amenable to the discipline of figures. It lacks the gift of prophecy which Astronomy has, and the magic powers that belong to Electricity and Chemistry. But if it must consent to occupy a lower rank than these, it has very honourable associates in Agriculture, Meteorology, and social and economic science; in all of which events are brought about by many concurrent causes of very variable intensity; in all of which, when applied to individual instances, we often deserve, where we cannot command, success.

"Be the proper place of Medicine among the sciences, however, what it may, its right to the foremost place among the arts is not to be questioned. The art of healing, practised in the light of all the sciences which enter into the medical curriculum, is one of which its votaries need not be ashamed. To you who come here to study it, we (my colleagues and myself) wish all honour, happiness, and success."

LONDON HOSPITAL.

INTRODUCTORY ADDRESS BY MR. CRITCHETT.

THE lecturer commenced by alluding to some of the changes time had wrought since he was a medical student. Of those who then held the foremost rank, how many had passed away, but though the Blizards and the Headingtons were gone, the spirit that animated them still survived in the present profession, and the germs of thought they sowed had fructified. If they could revisit us they would find our hospital adorned with expanded wings; our school changed into a college, and with an increasing body of intelligent medical students. Though men of all grades of the profession had honoured him with their presence, it was to the young medical student that he wished chiefly to address himself on this occasion. He must first explain to him the nature of his studies, and secondly attempt to unfold to him the character of the profession to which he aspired to belong. The end that the medical student had to attain was the knowledge of disease; to this there was only one road. The accuracy with which every possible departure from the normal standard was estimated would be in exact proportion to the knowledge of the form, structure, and functions of each organ. He (the lecturer) would go yet a step further. An accurate acquaintance with the form, structure, and functions of any organ would often enable the student to presuppose the diseases to which it was obnoxious by presupposing every possible deviation from the normal condition; and that which was thus presupposed or hypothesized would, in most instances, be found to anticipate that which actually occurred as a morbid phenomenon. This principle he deemed well worthy of special attention, because it very much facilitated the comprehension, and simplified the grasping and arrangement of disease, and because it had been the means of leading up to many brilliant discoveries, and opened up a new method of inquiry. The lecturer then gave some curious illustrations of this view taken from affections of the eye. He then went on to say that all really scientific treatment must be based upon accurate diagnosis. The most successful practitioner owed his pre-eminence rather to the correctness of his aim, and to his exact adaptation of the means to the end, than to the possession of any knowledge of remedies unknown to others.

Having then touched upon the nature of the studies which the student would be required to master, the lecturer next proceeded to dilate upon the various elements of which the medical profession was composed. He first alluded to the general practitioner, referring to his valuable and untiring labours, especially amongst the poor—labours which were often so ill-requited. He next described the characteristics of the hospital surgeon and physician, whose special function was to make these great institutions subserve the double purpose of ministering to the suffering poor and advancing the cause of medical science and education. The tendency to the subdivision of labour was increasing in this, as well as in every other profession, and was an inevitable result of the progress of science, so that the "specialist," as he was usually termed, now formed an important element in the professional body. The sanitary officer might be regarded as a comparatively modern branch of the profession, whose main function it was to prevent the spread of disease, and the tendency of whose labours was ultimately to promote the medical profession from its present function of combating disease to the higher duty of presiding over and guarding the public health. Mr. Critchett then concluded this portion of his address by an allusion to the medical press, that wide-spread power that makes the thoughts of the few the property of the many, and watches over the interests of the profession, often making its influence felt in the councils of the nation. One of its most signal triumphs had been the success of its recent noble efforts to alleviate the condition of our paupers—efforts which deserved the gratitude not only of the profession, but of the country at large.

In conclusion the lecturer quoted, from an address which he had delivered on a similar occasion twenty years ago, a passage in which the progress of the profession was shadowed forth. The anticipations then expressed, he thought, had been abundantly realised; but though much had been done, much yet remained to do. He hoped that the next twenty years would show even greater and more brilliant progress, and that the students whom he was addressing would, by their zeal and industry in the noble profession in which they were enlisted, largely contribute to that progress.

ST. MARY'S HOSPITAL.

MR. JAMES LANE'S INTRODUCTORY LECTURE.

THE lecturer commenced by offering a cordial welcome to new and old students, as well as to those visitors and friends who had honoured the occasion by their presence. After alluding to the present position and satisfactory prospects of the school, he remarked that it was five-and-twenty years ago,

just a quarter of a century, since his first induction into the medical profession, and as during twenty out of these five-and-twenty years a considerable portion of his time and energies had been employed in teaching, he thought he could not do better, in addressing them, than state the convictions which his experience had led him to form with respect to some of the requirements of medical education, and what appeared to him to be the principal directions in which we should aim at improvement, if we wished to increase the public usefulness of our profession, and, as a necessary consequence of such increased usefulness, to obtain for it increased social influence and consideration. Looking back upon things as they were five-and-twenty years ago, many and great changes had been effected, for which students, as well as the profession at large, had great reason for congratulation. Foremost amongst these changes he referred especially to the efforts which had been made to ensure a more complete preliminary education. The regulations now compelled the student to show, by examination, before he could register at a medical school that he had received a certain amount of preliminary mental training. He had to show that he knew something of the English language, English grammar, history, and so forth; also that he had a certain acquaintance with Latin, although this did not appear to be necessarily of a very extended character, to judge from the published requirements of some of the examining corporations. He was sorry to say that as yet a student need not, unless he chose, know anything whatever of Greek, nor of any modern language, if he could substitute for this latter an elementary a quaintance with chemistry, botany, or algebra. The preliminary test, as it stood at present, was, he thought, very far from being all that could be desired, but it was, nevertheless, a great thing to have established the principle that all young men entering the profession should have received at least the *elements* of such a liberal education as could alone fit them to enter upon so arduous, complex, and increasingly difficult a study as that of medicine.

As an excuse for dwelling upon subjects which were not, perhaps, strictly of a professional character, he quoted the Report of the Committee on Preliminary Education, recently adopted by the General Medical Council, which says, "It is quite apparent that the defects which require to be remedied in the education of students of medicine are to be found less in the subjects of professional study than in provision for that preliminary mental culture which would enable the student to grasp with vigour the various intricate and complicated sciences on which medicine is founded, or with which it claims affinity."

Unfortunately, this encouraging preamble is followed by the inconsistent conclusion that it will not be possible in 1869 to insist upon a knowledge of Greek as a preliminary subject, although this date had been fixed upon three years ago for its introduction. It appeared, also, he was sorry to see, that one of the leading examining bodies considered "two years' notice insufficient for the introduction of some very small additions in geometry and algebra by the Council," the Council being either unable or unwilling to enforce its recommendations. He confessed to a feeling of great disappointment that this conclusion should have been arrived at; for he could not conceive it either necessary or desirable, from any point of view, that a young man entering the medical profession should be less cultivated in those branches of knowledge which make up the ordinary education of a gentleman, or should start from a lower intellectual stand-point than, let us say, the clergyman or the barrister, especially when it was considered how vastly wider was the range of study of which he was expected to make himself master.

Mr. Lane could not see any valid reason why the Medical Council should not insist upon an adequate knowledge of both Latin and Greek, as well as one modern language at least in addition to our own; or why they should not demand a fair proportion of mathematics—i. e., besides the rules of arithmetic, algebra, and geometry up to a certain point, together with the elements of natural science, at least in the branches of chemistry and natural philosophy. If the Council, actuated by the best intentions, as he believed them to be, were unable to enforce their wishes in such matters as this upon reluctant but influential corporations, it was for public opinion in the profession to strengthen their hands; and he trusted that the efforts which are now being made to obtain a more direct representation of the profession in their medical Parliament would, before long, enable them to express that opinion in a more effectual manner on this and on other important subjects.

He thought there must be something wrong somewhere that the medical profession, eminently attractive as it ought certainly to be from a scientific and intellectual point of view, eminently honourable and beneficent, as it undoubtedly was in its every aim and object, should be less popular than other professions with the more highly educated of our youth; and he believed one important reason why it was less tempting to the ambition of a class which above all others it was most desirable to secure, might be found in the lower educational standard with which it had hitherto been thought sufficient to commence. He had dwelt at some length on these matters because he had a strong conviction that advance in the direction indicated afforded the surest and readiest way to improve the social status of the profession, to increase its public and private influence and usefulness, and to render its voice more powerful for good in all those sanitary and social reforms upon which the well-being of the community was becoming continually more dependent.

Mr. Lane then addressed himself more particularly to intending students, advising them how best to employ their time, and insisting especially on the importance of attention to the study of practical anatomy by dissections. He thought this was usually now the student's weak point, whereas formerly it used to be one of his strongest ones; and he attributed this to the more limited time allotted to it in the present curriculum—viz., two winter sessions, instead of three as formerly, and also that he was examined in it at the end of his second winter, after which he might, for any regulation to the contrary, dismiss it from his mind altogether. With this one exception he thought incalculable advantages had been gained by the system of double examinations, and by the more practical character which all the examinations had acquired. The system of clinical study adopted at St. Mary's Hospital, and which had been found to work so advantageously, was explained, and students were told that there were two things to which it behoved them specially to attend. One was the study of anatomy by dissection, the other the study of disease in the hospital wards. They should endeavour to neglect nothing, if they could avoid it, but above all they should not neglect either of these. He trusted new comers would not be alarmed at the amount of work which had been indicated as expected from them. But if there was plenty of work to be done, they would find their comrades had not been remiss in devising facilities for amusement, for they would find a boat club, a football club, and a cricket club, ready to their hands if their tastes lay that way, not to mention the United Hospitals Athletic Club recently established. With all these things he confessed to having a cordial sympathy, but he was not quite sure whether they were not being a little overdone, and as a friendly critic he would venture to offer a word of warning against this tendency.

"If," he said, "you would keep that ideal of perfection before you, the *mens sana in corpore sano*, you will best approach it by a judicious combination of work and play. Such a combination is, I know, somewhat difficult for young gentlemen of eighteen or twenty; I found it so myself: it requires some resolution and self-denial. But do not let it be, as it too often is, all work at one time and all play at another. Such a practice does not promote either the sound mind or the sound body. It makes the work wearisome while you are about it; and the play is deprived of more than half its pleasure if you cannot feel that you have acquired a right to it as the reward of work well done. My advice to you with respect to work is, above all things, to cultivate regular habits. Do not work spasmodically, or try to do too much at once. Resolve to do something every day, and do not allow anything to make you break that resolution. Even if it be but little, it is surprising how much it will amount to at the end of the year. I do not advise you to attempt to do too much at first; do not, if I may so express myself, make the pace too good to last. The course you have before you is a long one: it will take you over what I will venture to call a very heavy and difficult country—one of which you have as yet no experience. It is not those who can start the fastest, but those who can 'stay' the longest, who will be found in front at the end. I have heard many eloquent sermons preached on occasions like the present, the text of which has been, that if you would only work hard enough, worldly success and worldly honours would be sure to attend your efforts. *I* do not hold out to you any such certain hope, though I *do* believe that success *without* hard work is becoming day by day more difficult. But, unfortunately, in every calling, one has not far to seek for examples in which time-serving and trickery, quackery and charlatanism, are lavishly rewarded, while honest labour and genuine merit pass comparatively unnoticed. The profession of medicine

forms no happy exception, in this respect, to other human institutions; and human nature has not yet reached, nor do I suppose it ever will reach, that stage of development in which virtue shall always meet with its due reward, and vice its appropriate punishment. 'It is not in mortals,' medical or otherwise, 'to command success'; but it does rest with yourselves whether or not you shall 'deserve it.' It is for you to do your duty in the state of life to which you are called; to walk straight forward in the path of rectitude and honour, swerving neither to the right nor to the left, however great the temptation may be. Do this, and take the consequences as they come, be they what they may. Live your lives in this spirit, and then, should misfortune unhappily be the lot of any of you, you will be the better able to meet it as brave men should. I wish you most cordially every happiness and every success to which you aspire—that you may not only deserve it, but that you may also attain it. Nevertheless, I say to each of you, however this may be, and whether successful or not—'*Fais ton devoir, advienne que pourra.*' This will be a far better consolation when the time comes that you must 'go out into the dark,' than any amount of wealth or worldly honour otherwise attained."

ST. THOMAS'S HOSPITAL.

INTRODUCTORY LECTURE BY DR. BARNES.

IN the active inquiry and revolution in education now going forward, two leading points are conspicuous. The one is the growing desire to cultivate to a greater extent the study of the natural sciences, which may be called perhaps the sciences of observation, in preference to the study of pure literature and mathematics. The other point is concerned, not with the subject of study, but rather with the method of study, and with the manner of applying its results in the most practical manner to the public service. The great engine chosen for this purpose is competition. Now Medicine may fairly claim to have had a large share, if not even to have led the way, in initiating and promoting both these revolutions. All that great branch of natural science which is included under the term biology, which takes cognisance of everything that lives, has long been almost exclusively the domain of the student of medicine. The foundations of natural history were, indeed, laid broadly and firmly by Aristotle; but it may also be said of that gigantic intellect that he grasped and expounded all the knowledge of his time. The Hippocratic maxim, "Art is long, and life short," was less true in Aristotle's time than it is now, when one branch or twig of the tree of knowledge is enough to occupy the whole energies of a man. In the earlier ages, when human dissection was forbidden by religion, by custom, or by prejudice, practitioners of medicine were continually seeking to solve the problem of life, and the processes of health and disease, by dissecting the lower animals. Thus medicine stimulated and fostered the study of the animal kingdom. And again, as medicine called for remedies, the mineral and vegetable kingdoms were explored to this end. And down from that time through the Dark Ages, as monks kept alive, but scarcely extended, the classical and mathematical lore of the ancients, so the practitioners of medicine, who were often indeed monks too, kept alive and extended the knowledge of natural science. In modern times natural science, by virtue of its great developmental force, has acquired a higher position, and has become the companion as well as the handmaid of medicine; but still so intimate is their interdependence, that they seem incapable of independent existence. It may be true that we now and then see an independent votary of pure science; but then the examples are rare indeed in which the flame has not been kindled at the shrine of medicine, in which the mind has not been trained by the discipline of medical study, and stored with the knowledge accumulated by the labours of medical students. To cite examples at large would be needless: the names of Linnæus, Harvey, and Hunter the immortal, Owen, Huxley, Falconer, Hooker, rise at the thought. The talent of observation, cultivated as students of medicine, has supplied the facts and the materials upon which genius has raised the structure of laws and generalisations.

Several professions demand from their disciples a close observation of some one or more of the elements of nature. But it is not too much to say that the physician must look at nature in all her elements and aspects, not necessarily deeply in all, but at least with sufficient care to enable him to grasp the chief factors which are concerned in the physical and intellectual development and decay of man. It is this imperative duty which gives the physician his characteristic familiarity with nature, which gives the tone to his mind, which forms his habits, and which lends to his work a never-failing fascination. ..... And we have this great, almost singular, advantage in the prosecution of our elementary studies—that we can always, when in doubt or error, appeal to the uniform standard of nature: we can always repeat our observations, we can reproduce or vary the conditions of them, and test the correctness of our conclusions by comparing them with those of others. We are thus, to a great extent, secured against that vagueness and uncertainty which surround all those branches of study which can only be pursued through the medium of books. For example, take history. ..... History is so distorted by the passions and interests of men that all evidence is suspected by one party or the other, and can only be received by men of no party with distrust. A document may be forged; but we cannot forge an animal or a plant. If any observer mistake or misinterpret a fact in anatomy or physiology to-morrow, a thousand observers are prepared to re-examine the fact, and to reconsider from direct appeal to the great original the truth of the interpretation. Of course the natural sciences are not free from contention as to fact and interpretation. Is man a promoted ape? Are the brains of the two differently formed? The question may not seem one of great practical interest; but, such as it is, the materials exist for solving it so long as apes and men continue. That both will continue for a long time, with organisations distinct and unchanged, I do not doubt. .....

[Dr. Barnes then proceeded to point out the relative value of mathematical knowledge in acquiring the habit and faculty of applying the mind with concentrated force upon any given subject of inquiry, and as furnishing knowledge that is requisite for the elucidation and extension of other subjects of study.]

Of late years the study of one or more of the modern languages has been much insisted upon. The scientific activity of our French, German, Dutch, and Italian brethren is so great, their contributions to knowledge are so rich, that we cannot hope to keep pace with the times unless we bind to our purposes, and make tools of, the modern languages. Then, again, as to competition, that potent engine from which so much—I venture to submit, too much—is expected. Competition has long been the accepted test, and therefore the stimulus of knowledge in the older universities and in the medical schools. A double-first or a wrangler is great and honoured for his day or year; if he unfortunately is weak enough to believe that a fellowship and celibacy are prizes worthy of the highest ambition, the chances are that he sinks into a state of æsthetic indolence; he becomes a pensioner upon the revenues bequeathed by liberality to encourage industry; he enjoys in monotonous sadness and pride the reward of work, he having only got possession of the tools and acquired the capacity for doing useful work. This serious mistake is often made, not alone by double-firsts and wranglers, but by the world. We are apt to confound the tool—the *organon*, as Bacon might call it—with the work which that tool, rightly handled, can produce. We are disposed to credit a man with great powers and great acquisitions simply because he has obtained a high place in a competitive examination. This is often to be unjust, not alone to those who are beaten in the contest, but also to those who have won. Examinations are framed to test the industry of the candidates in the acquisition of taught knowledge; they do not, at least as a rule, give scope to the display of natural vigour of mind, of original power of reflection and research. The men who commonly excel in competition are those who servilely bend every power they possess to acquire what will pay at examinations; they are often men who have a special faculty for accumulating and appropriating the stock doctrines of the schools. Too commonly such men attain their highest stage of development at the examination tables. It would seem as if they had at this point exhausted the powers with which nature had endowed them; they do nothing more as long as they live, and they are apt to think they have done enough to justify their claims to those rewards that rightly belong to superior merit.

The right use of competition is as a corrective—a safeguard against nepotism. Indeed, it is almost the only one. There is so treacherous a tendency in the human mind to discern superior merit in those whom we personally know, or in whose advancement we feel an interest, that some security is imperatively called for to protect the public interests. As a preliminary safeguard, as a password to challenge those who present themselves at the outer gates, competition is perhaps

the best that offers. It has this especial recommendation,—that it gives to the unfriended and indigent student the means of breaking through those barriers which wealth and connexion are too apt to rear for the protection and advancement of their clients. It tends also to encourage an honourable self reliance, and an independent spirit. To give exclusive or undue preference to those who stand foremost in competitive examinations is however to disregard a great fact in the history of the human mind; it is to fall into that most fatal error of setting up one Procrustean standard for all intellects. Now who can fail to observe that there are wide differences in the rate of development of different minds? Some men attain their full powers, or at least they seem never to improve upon what they had reached, at a very early age. There is, as Bacon expressed it, "an over-early ripeness in years which fadeth betimes." To use Quintilian's simile, they grow yellow with empty ears before the harvest time has come. Other minds, growing more slowly, are gaining strength with time, and, with the habit of self-reliance and independent research, miss their mark in the premature contests of youth, but shine the more brilliantly and the more prominently when a new test of excellence is applied—namely, the capacity of doing honest work that shall profit mankind. Competition favours precocity, or rather it favours those attributes which more especially belong to adolescence, and which, therefore, mark a stage of imperfect mental development. Memory is one of these attributes, and this natural gift is not only carefully exercised, but various technical tricks are resorted to in order to reproduce patly at the examination tables what is likely to be wanted. Prominent amongst the means of aiding or supplementing memory is the habit of taking full notes of lectures, which I do not regard as necessary to success. Surveying the careers of some of my old companions, I see that some who took but few notes have become distinguished men of robust intellect; and, on the other hand, I see others whose note-books would form a library, who have settled down into the most humdrum routine—very types of mediocrity. I therefore conclude that a man of many notes will not necessarily make a man of note.

What is the great end of education? It is not simply to heap up the greatest amount of knowledge in the mind. The aim should rather be to discipline the intellect, to give precision and quickness to the faculties of perception and observation, to strengthen the power of reasoning and comparing, so as to form just and rapid conclusions upon the cases and problems that arise in daily practice. "J'aime mieux," said Montaigne, "forger mon âme, que la meubler." Now this end is not attained, I think, by trusting to note-books. The art of writing and the invention of printing have even been thought by some to have done doubtful service in strengthening the human intellect, however vast may be their influence in extending and diffusing knowledge. Plato said that without this delusive aid of alphabetical writing, "men would have been compelled to exercise the understanding and the memory, and by deep meditation to make truth thoroughly their own. Now, on the contrary, much knowledge is traced on paper, but little is engraved in the soul." Quintilian, too, said, "Memoriæ plerumque inhæret fidelius, quod nulla scribendi securitate laxatur." And I may enforce this argument by quoting the opinion of one honoured alike amongst women and amongst men, and deserving of special honour in this hospital. Florence Nightingale says, "If you find it help you to take notes, by all means do so; I think it more often tames than strengthens the memory and observation." What I have said of note-taking does not apply to recording facts and observations. There is no better means of training the mind to the habit of orderly observation and precision in judgment than the methodical practice of taking notes of cases of sickness. The power of taking a case correctly, seizing the important points, and avoiding that prolixity and repetition which render subsequent study of the history tedious and repulsive is invaluable to the student and to the practical physician. Each well-recorded case has its individual worth as an exercise and as a record of facts; and cases acquire an interest and impart instruction which cannot be limited when their number affords the materials for comparison, and for drawing general conclusions. The question as to the best mode of learning suggests the cognate question as to the best method of teaching. Three principal methods are in use, and come to some extent into competition. There is the simple method of giving no formal instruction, but of so ordering the work in the hospital, in the laboratory, and the dissecting-rooms, of providing museums and libraries, as to afford the student the means of study, and leaving him very much to his own devices in turning his opportunities to account. Now for a young man of vigorous intellect, of resolute industry and self-reliance, this negative or *laissez-faire* method of teaching offers very great advantages. It calls forth in the highest degree the habit of original inquiry, and since that knowledge which a man acquires by earnest labour by himself becomes more a part of himself, it gives greater solidity and depth. I am afraid, however, that the men who could be trusted to self-tuition altogether are few, and that even the most capable would lose much valuable time, and expend much energy in unprofitable directions. At the same time, I am firmly convinced that no one will ever be worth much, either as a student or a practitioner, who expects to be taught all that he ought to learn, who is ever calling upon Hercules, and who does not realise the truth that he must work for himself.

The second method is that of oral instruction by a staff of lecturers. This method has been practised in almost all departments of learning from the earliest ages, a sufficient reason, perhaps, in the eyes of our modern reformers for condemning it. It is argued that a man may as well read what the lecturer has to say as hear him read or say it. Now I freely admit that if the lecturer writes out and reads his lectures, trusting nothing to spontaneous exposition or to practical demonstration or illustration, he will probably fail to keep alive the attention of his class, and will certainly miss the great object of oral instruction. But this is not what is now understood by lectures. The demonstrative subjects, as chemistry, botany, anatomy, physiology, operative medicine, surgery, and obstetrics, as distinguished from the purely dogmatic parts of medical education, can hardly be taught or learned efficiently without the aid of *viva voce* and manual demonstration. Those who decry lectures are blind to one of the most prolific sources of the increase of knowledge. The lecturer who recognises the full obligation he has undertaken, has to prepare the subject-matter of every lecture; he has to collect and weigh the latest labours of others, and is thus constantly stimulated to add to the fulness and correctness of the science he has to illustrate by original investigations of his own. The earnest lecturer will always be in advance of the latest book; he can hardly stand still; and he who is animated with the fire of fresh discovery, who is glowing with the consciousness of new ideas, cannot fail to quicken his hearers with a sympathetic spark. The lecturer, moreover, has the means of explaining his subject with a copiousness and variety of illustration, and of helping individual men over a stumbling-block, which books cannot possibly possess. "Books do much," says Mrs. Shelley, "but the living intercourse is the vital heat." There is in extempore demonstration an impulse to the flow of thought, to the sudden suggestions of novel truth; gleams of light are thrown off from the kindled imagination, which, as the electric spark flashed upon a whirling disc of primitive colours enables one to separate the illusory compound into its elements, enable the speaker to catch instantaneously the solving differences and relations of facts and ideas, which might never come to him under the less fervent magnetism of the closet.

Thirdly, there is what is called the tutorial method of instruction. The common sense of mankind has, I think, not unjustly stigmatised this method by attaching to it the contemptuous words "coaching and grinding." The tutor is to the slow or idle student what Hercules was to the slothful waggoner. He is expected to do all the work, to supply concentrated essences of the teaching of others, so prepared and sweetened as to be at once palatable and easily digested. What is so imbibed is notoriously of little permanent worth,—

> "Pater ipse colendi
> Haud facilem esse viam voluit, primusque per artem,
> Movit agros, curis acuens mortalia corda."

And the tutor on his part scarcely attempts to teach anything original; he teaches at second-hand; and his pupils, learning by rote, are fortunate if they can make their parrot cries chime in with passable congruity with the questions put at the examining table.

I am afraid, however, that dependence upon this, the least desirable mode of teaching, is increasing; and I think I discern the cause in the increasing stringency and extent of the subjects of examination. I believe the examinations of some of our licensing bodies are now strained to the highest point of tension, and that, by excessive multiplication of subjects and severity of examination, the object sought to be attained is in danger of being defeated. The pressure put upon men at the examinations is so great that they are almost compelled to strain every nerve to acquire that which will carry them through this ordeal. The consequence is that the cultivation of practical manual dexterity and bedside skill is often

neglected for the sake of cramming the memory with book learning. Every means is exhausted to pack as much matter in a small time as the student's capacity will bear, treating his skull as the traveller treats an extensible portmanteau. I am sure we have all seen men of sterling stuff, of excellent judgment, infinitely more worthy of being trusted with the care of life and limb than those over-stuffed and ready-to-burst receptacles of scholastic lore, cut a comparatively indifferent figure before the examining boards. In the long run, of course, the man of ready skill will assert his superiority; but he has not been started fairly. These are some of the reflections which my position here to-day suggests to me. They are trite enough, I very well know. They are at any rate the conclusions drawn from experience and an impartial judgment. I could have wished to say more upon the relations that medical bears to general education. Those relations are more intimate than is apparent at first sight. I believe that it is mainly through the influence of a medical education, represented by the University of London, that the natural sciences have at last found a home in Oxford and Cambridge, and that thus the circle of polite and useful knowledge has been completed. But whilst the natural sciences can be with great advantage studied up to a certain point at Oxford and Cambridge,—good teachers, museums, and books will do much,—the great college, the great university, that gives the informing purpose, and brings into one supreme focus the light of all science, directing it to the alleviation of the sufferings of man, is the hospital. A great hospital, if rightly used, is even more than a great school of natural science; it affords boundless subjects for observation, reflection, and the exercise of all Christian virtues. It presents, in England at least, where hospitals are supported not by State taxes, or by forced contributions from the sick who come for relief, but by the free gifts of charity, a spectacle to my mind one of the grandest that humanity can show. Not only do science and charity contract here an indissoluble union, gathering strength by that union, each giving to each illimitable increase of power to do good, but they also gather around them many of the best social and political virtues of the land. All classes meet here on common ground, all here recognise their subjection to the common lot of humanity, all unite to bear one another's burdens.

A great hospital is, besides, an epitome of our political life. It is an administration independent of the government of the State. It is a standing declaration that political freedom is the sister of Christian charity and of science. These virtues, closely allied in their essence and in their action in this great hospital, will, we hope, before another year has run, find a new home on the noblest site in Europe. The second foundation of St. Thomas's is a part, and no insignificant part, of the history of the illustrious reign of Queen Victoria. Strangers have said that London was poor in public monuments. I think we may point with pride to a concentration of public monuments, which, as creations of architectural skill, can hardly be surpassed; and, if we look upon them with the eye of the philanthropist, and regard them as symbols of the virtues that make a nation great, where shall we find their rivals? All human things must decay; but the virtues that dignify human nature will, we trust, endure. Let us indulge the hope that the prophesied New Zealander may many centuries hence take his stand upon the unbroken footway of the magnificent bridge which spans the glorious river on whose ebb and flow free trade is borne, and gaze on the one hand upon the grand cathedral dedicated to our free religion, upon the splendid pile that marks our free political life; and, on the other hand, upon that noble hospital which is destined to carry on the sacred work of free charity and free science.

The New Zealander, let us hope, will never look upon the ruins of Westminster Abbey, of the British Parliament, or of St. Thomas's Hospital. Religion, charity, and science, and freedom which hallows and vivifies all, shall never die.

UNIVERSITY COLLEGE.

PROFESSOR ERICHSEN'S INTRODUCTORY LECTURE.

MR. ERICHSEN commenced by expressing the pleasure which he felt at the renewal of the ties which bound them together as professor and pupil, and at the formation of fresh acquaintances among those who came together on that occasion for the first time—acquaintances which, he knew by past experience, would in many instances culminate in sincere and lasting friendship. It was a pleasure, however, not unmixed with pain. "Each new session," he remarked, "constitutes one of those sharply-defined epochs in life which serve as milestones by the way to mark the passage of the fleeting years, and each reminds us of the many men who have met thus, year after year, determined to carve out for themselves a happy and a useful future, and of whom so many have failed to reach the goal; some prematurely removed from the scene of their activity by an untimely death; others, with health broken and hopes shattered, destined to the disappointments and vexations of a long and unsuccessful struggle. To the pupil, however, the commencement of the first session is an occasion of unmixed interest, for it is his initiation into a profession which is to become the occupation of his future life; it is the portal to that future which he paints to himself in brilliant colours, and which is gilded by all the hopefulness of youth.

Mr. Erichsen then glanced at a question which, he said, is presented to all at the commencement of their student life, whether medicine is to be regarded and studied as an art or as a science. It would, he considered, fall completely under the definition of a science which Johnson gives—"a certainty grounded on demonstrations, or an art attained by precepts and built on principles." Human anatomy, on which are based the rules according to which the surgeon shapes his operative procedures, is as certain as are the truths of astronomy and the precepts derived from it may be as implicitly relied upon. The rules for the operations of lithotomy and for strangulated hernia, afford illustrations of this. Similarly, physiology, which stands in the same relation to the physician as anatomy does to the surgeon, is a matter of equal certainty, and affords an equally sure guidance in the diagnosis of disease. Of this the detection and discrimination of the various diseases of the heart by auscultation, and the localisation of disease to particular portions of the nervous system, according to the symptoms, are striking illustrations. And not only are medicine and surgery based upon certain sciences, but they themselves constitute a science of disease scarcely less sure. The uniform course of some diseases such as the acute specifics, the relations between different diseased conditions—the structure of tumours, for instance,—are all matters of as much certainty as the phenomena of digestion and the structure of an internal organ or of the skin itself. Indeed, pathology has, in its turn, thrown light upon many normal phenomena which physiology alone was quite unable to explain. Such is the connexion of the third left frontal convolution of the brain with the power of speech, which has been demonstrated by Trousseau, Broca, &c. The scientific nature of medicine is even more manifest when it is looked at in its relation to the laws of health. The conditions producing many diseases, as cholera, surgical erysipelas, pyæmia, &c., are so well known that those diseases may almost be produced at will.

In another department of medicine, however—that of the treatment and the progress of disease—we tread upon less certain ground. It is difficult to trace the laws, so varied and complex are the conditions surrounding and influencing them. It is here that individual skill and powers of observation are of such inestimable value. The art of medicine, however, need not be wholly empirical. Enough that is certain is known to furnish a sure groundwork for a scientific practice, dependent on principles and based on precepts. But too often we find ourselves in the region of uncertainty, both as to the course which a disease will run and the effect of remedies upon it. Here we find the greatest difference in opinion among medical men; some rejecting drugs altogether and trusting to the powers of nature alone. But the methods of treatment that have been handed down to us should be neither accepted with blind faith nor rejected with equally unscientific incredulity; the uncertainty which still envelopes the subject must be taken as an indication, not of the unscientific nature of medicine, but of the inherent difficulties of the subject, and of the difficulty of deducing general laws from the mass of facts which lie in apparent disorder.

The art and practice of medicine, Mr. Erichsen went on to say, may be regarded as founded on a tripod—of science, observation or experience, and individual skill. The value of science, as a foundation for practical medicine, has received a recent illustration in the elaboration of the antiseptic method of treating wounds devised by Professor Lister. The second leg of the tripod, observation, comprehends not only the recognition of a phenomena by its signs, but its investigation aided by the judgment. The comparison of observations, especially when reduced to the statistical form, is a means for the determination of facts with absolute and mathematical

certainty. Much has thus been done in ascertaining the causes of disease, and it is in this way, if in any, that the real value of remedies must be ascertained. Individual skill, the third leg of the tripod, is highly prized, and with justice, by both the public and the profession, but at the same time too much credit must not be attached to the simple possession of it. The manipulator should not be confounded with the inventor; the man, however skilful, who merely applies rules, with the other who has devised them.

From this it will be seen that medicine is neither a pure science nor a simple art, but the art can only be safely practised when its foundations are laid deep in the science of biology, which underlies the whole structure of the Æsculapian edifice. The student should endeavour to be neither wholly scientific nor wholly practical, but should combine the two somewhat opposite elements of science and of art, of learning and of experience, of thought and of action, ever remembering the advice of Bacon,—"They be the best physicians who, being learned, incline to the traditions of experience, or, being empirics, incline to the methods of learning."

The speaker then glanced at the different methods of learning, by books and lectures, in which were epitomised a knowledge—the result of the labours of generations—which the student could not possibly gain afresh for himself. They were to observe a due proportion in their studies, and not to devote themselves too exclusively to any one department. They were to trouble themselves less about what they did not know than about what they did know.

In conclusion he urged strongly upon his hearers the importance of clinical work and the recording of cases, as an aid to which he recommended them to cultivate especially the arts of writing shorthand and of drawing. The latter was especially useful in fixing details in the memory, while by the former—an art easily learned and valuable in numerous ways to the medical student—they were enabled to record observations as rapidly as they could be made.

WESTMINSTER HOSPITAL.

INTRODUCTORY LECTURE BY MR. FRANCIS MASON.

On the great stage of the world, whatever may be our calling, we have many important parts to play. Whether we be engaged in the pursuit of science for its own sake, whether we be occupied in professional pursuits, or whether we be employed in the more lucrative work of commerce, we all have assigned to us our little sphere of usefulness; and just as "small sands make the mountain, moments make the year, and trifles life," so the strength, the industry—nay, the welfare of the whole community, all depend on the manner in which each individual plays his part in the drama of every-day life. . . . Such meetings as this are not without their advantages, inasmuch as they present a convenient opportunity of extending the right hand of fellowship to those who are on the threshold of their professional studies, and also of offering increased encouragement to others who, having advanced a certain distance on the road of life, are

> "Stepping from hindrance on to hindrance,
> As a boy crosses, on the stones, the stream,"

and are steadily approaching that goal of success which is the honest aspiration and the purest ambition of every hard-working industrious man.

The first of October marks an era in the history of every medical man's life. To-day the several schools in this great metropolis meet in friendly rivalry; and we, as a part of the educational system, take up the gauntlet, and with no spirit of petty jealousy, no ill-feeling, no bitter envy, but with the fullest confidence in our own prowess, boldly and fearlessly enter the arena, prepared, come what may, to fight the battle with courage and determination; so that, when the contest is o'er and the star of peace returns, each one may lay his hand on his heart and say with the warrior of old, "Verily, I have laboured in a good cause, and I have endeavoured to do my duty manfully."

The study of medicine commends itself. We are told that there are five great intellectual professions relating to the daily necessities of life: the soldiers to defend it; the pastors to instruct it; the physicians to keep it in health; the lawyers to enforce justice in it; and the merchant to provide for it. Of these daily necessities, by no means the least worthy of our consideration is the duty of the physician to keep the body in health. That is the part we have to play.

The nature of our education affords the exercise of the highest faculties of the mind.

> "The flower, the tree, the birds, the running brook,
> Are all to us material for thought."

It is impossible to study anatomy, physiology, or chemistry—those subjects on which we build our superstructure—without being deeply impressed with the infinite wisdom of Divine power. In reading the volume of nature we are animated by a passionate yearning for increased research in exact proportion as our ideas become more developed, our tastes more elevated, and our intellects more refined. Again, if we view the beautiful symmetry and variety of nature's forms, the grace and regularity of her designs, our minds must be led to purer notions and happier thoughts.

As our reading comprises an endless variety of subjects, it is no matter of surprise that from time immemorial medicine should have been studied for its own sake by those possessing the keenest reasoning powers; but when it is cultivated for the sake of aiding others, it is like the quality of mercy—

> "It is twice bless'd,
> It blesseth him that gives, and him that takes."

In the pursuit of a profession which has for its object such lofty and beneficent aims—the cure of disease, the relief of suffering, the keeping the body in health—it is no wonder that the good physician should be taken as the highest type of humanity.

Further, if we regard the worldly emolument to be derived from the practice of our profession, we have, even on this score, not much reason to complain. Were we all to attain great wealth, high station, or enormous influence, our natural emulation would be quickly dispelled, and our motives for acquiring superior skill speedily crushed. Such honours are but to the few. Yet the prizes are open to all; and just as the race is to the swift, and the battle to the strong, so he who arms himself with perseverance, self-reliance, and endurance will be the first to reach the winning post. We may all, however, expect a modest competency; but we acquire a far richer reward, which gold cannot purchase—the heartfelt gratitude and thanks of suffering humanity, as well as the intense satisfaction we ourselves derive from pursuing a vocation whose object is at once sacred, unselfish, and sublime.

Is it nothing that science has discovered an agent which produces complete temporary insensibility, so that the surgeon is enabled to perform the most trivial as well as the most formidable operations with absolute painlessness? Is it nothing that we have entrusted to our keeping the power of restoring sight to the blind, and of making the lame to walk? Is it nothing that when a child is suffering from impending suffocation, when indeed the last spark of life has well-nigh fled, we by our art can snatch the child from the very jaws of death? Is it nothing for us to know that when a patient is bleeding profusely and dangerously, we have committed to our care the means of instantly stemming that hæmorrhage? Is it nothing that in our daily practice our skill, properly applied, often changes the scene from one of utter grief and desolation to one of perfect joy and gladness? Is all this nothing? Then science is nothing, art is nothing, and our profession is nothing!

Mr. Mason then gave a brief history of the hospital, and spoke of it as being built under the shadow of the "brave old Abbey," and "cradled alike in all its holy influences," which, could it but speak, might tell many a sad tale of sickness, poverty, and distress, as well as testify to the numberless glorious triumphs achieved by our noble art over those accidents and diseases to which "all human flesh is heir."

In speaking of the medical officers, amongst whom were Cheselden and the celebrated Dr. Mead, he quoted the lines of the poet Pope,—

> "Weak tho' I am in limb and short of sight,
> Far from a lynx, and not a giant quite,
> I'd do what Mead and Cheselden advise
> To keep these limbs, and to preserve these eyes;"

and said it would be scant justice to the memory of those long since passed away were he not to say that they were men of the most cultivated intellect, of noble character, and of perfect integrity. Such men, he said, were bright examples that we may admire and imitate; for their memory—the best emblem of what is good and true—blossoms in the dust, and lives amongst us for evermore.

At first the student will no doubt be somewhat disheartened at the immense amount of work before him; but let him be of good cheer. Nothing is easy but what was at first difficult. By earnest, undivided attention all the obstacles that impede

his progress will fade and vanish as surely as the sun rising in the morning chases away the darkness of night.

In attending the lectures in accordance with the regulations of the examining boards there are two special advantages. In the first place much valuable information may be acquired; and, secondly, by regular attention are inculcated habits of self-discipline, punctuality, method, and exactness—in short, just those qualities essential to success, not only in our profession, but in every other walk of life.

The lecturer then spoke of note-taking as being most valuable in the form of short memoranda. He said there is nothing that conduces more to accuracy of observation and clearness of perception than the plan of committing our ideas to writing; for

> "Sounds which address the ear are lost, and die
> In one short hour, whilst that which strikes the eye
> Lives long upon the mind."

The instruction, however, that we give here (continued the lecturer) is to be regarded as a means to an end—namely, that of qualifying the pupil to practise his profession. We do not pretend to teach him all he is required to know, but we pride ourselves on teaching him how to learn for himself. We put before him the scattered threads of knowledge, and leave him to weave them into a new and substantial fabric.

In hospital practice the student will find that all his senses will, at various times, be called into action: the sense of touch, the sense of sight—that great gateway of the mind,—the sense of hearing, the sense of smell, and sometimes the sense of taste. Whilst he should never neglect to visit the wards, let him not think lightly of the out-patient department. Let him "be wise in small things, and ponder well the greatness of the little." He must cultivate the power of sustained thought; and if he wish to overcome any difficulties he must apply his mind intensely to the subject, remembering the old rhyme—

> "Tender-handed touch the nettle,
> It will sting you for your pains;
> Grasp it like a man of mettle,
> And it soft as silk remains."

Another important element in the acquisition of knowledge is self-examination—taking stock, as it were, of what we know. As medical men our motto should be "Semper paratus," for in our profession more than in any other, we have not only to be men of learning, but men of prompt action. We have to think when others are paralysed. We have to be decided when others are wavering.....And oh! how eloquent are our looks. A mother nursing her sick child will anxiously watch our every movement, our every expression, and one whisper, one hint, or even one gesture, will often suffice to snap the last and slenderest thread of hope.

Mr. Mason then dwelt on the importance of cultivating those qualities which are considered essential to the bearing of a gentlemen. Without stooping to base motives, without cringing to abject servility, we are called upon, he said, to exercise and rightly understand what is aptly termed "the art of pleasing." One patient, for example, will require our constant attendance, which we may consider unnecessary, whilst another will be greatly displeased if unsolicited we pay him a second visit. It is this discrimination, the keen perception of individual character, the knowledge of the world, tact, judgment, common sense—call it what we will,—the dealing with each case as each case requires, that we are forced to observe.

Mr. Mason then urged upon his hearers the importance of being self-reliant, reminding them that in practice it is easier to make our patients our friends than to make our friends our patients. If we cannot create opportunities we can take advantage of them when they are presented to us. If there be, as we are led to believe, a tide in the affairs of man which if taken at the flood is to lead us on to fortune, it is manifestly our duty to watch for that flood. We must, however, wait patiently; and, as De Maistre says, "To know how to wait is the great secret of success." Always working with a contented mind, and having at all times a due consideration for the feelings of others, we must cultivate habits of self-discipline, self-control, and self-respect. All these, combined with unflinching industry, untiring perseverance, and strict integrity, constitute the rungs that form the ladder of prosperity.

Mr. Mason said, in conclusion: I earnestly ask you, on behalf of my colleagues, as well as in my own name, to play your part as we hope to play ours, zealously, cheerfully, and faithfully, so that whilst we are endeavouring to fulfil the royal law of Scripture, which directs us to do unto others as we would have them do unto us, we may always rejoice in the boundless resources our noble profession affords of "looking through nature up to nature's God."

Inaugural Address

AT THE

OPENING OF THE WINTER SESSION

OF

QUEEN'S COLLEGE, BIRMINGHAM,

OCT. 1st, 1868.

BY LORD LYTTELTON.

GENTLEMEN,—I am bound not to yield to the temptation to dwell, on such an occasion as this, on any merely personal matters. And yet it might, perhaps, be more excusable than it sometimes is, if I were to do so. For about sixteen years I was connected with the management of this College, for much the greater part of it as its Principal. During that time its fortunes were strange and eventful. I became intimately acquainted in the course of it with some of the most remarkable men I have ever known; and if the garrulous gossip of recollection were what you are assembled to listen to, I might perhaps draw on such a fund with results more entertaining than profitable or edifying.

But this is not my business. I will not dwell on the circumstances in which I left the College in 1856; on the conditions which seemed to me to need fulfilment before I could rejoin the College; on the compliance, necessarily long delayed, with those conditions; or on my own feelings on re-entering those familiar abodes, somewhat I presume like those of that historical personage, Rip Van Winkle, after an interval of twelve years, there to find again few indeed of those by whom I was formerly surrounded. It might be more to the purpose that I should speak of the history of the College during these twelve years, as well as of its actual condition and prospects; but this I can do but very imperfectly, for I have not been able to obtain a sight of the records of the institution during the whole of that time.

One general statement I cannot but make, and it is one which not only I can make on my own knowledge, but which has been made repeatedly, and on high authority, and which I am very sure no one, however friendly to the College, will dispute,—namely, that in many important respects the voluminous annals of human mismanagement have no more signal example than is to be found in the history of the former days of this institution. I may say this with the less scruple, not only because if it was not mismanagement, it must have been something worse, which it certainly was not, but because I myself must, of course, have taken my share in that mismanagement. We had an illustrious benefactor, of advanced years, living a long way off, whom we never saw, and whom we got into the habit of regarding as a mine of fabulous and inexhaustible wealth existing for our sole benefit. Such a state of mind is never good for anyone, and it tends to produce that recklessness and laxity of administration which belongs to those who think nothing can hurt them, and of which we furnished so notable an example. Thence arose that Augean stable which we called our bye-laws, though such I believe they never really were, and which I myself once attempted to get into shape,—assuredly, as Carlyle said of editing Cromwell's speeches, as precious a bit of buckwashing as was ever undertaken; thence that chaos of conveyances and trust deeds in which so many of these excellent persons, the draughtsmen of the law, ran riot for so many years with unrestrained delight, which I was told nearly drove distracted so unimpressible a person as an Assistant Charity Commissioner, and which even the central Commission itself could not deal with except through a labour of years; thence that universal collapse under which of late years the College would undoubtedly have vanished into infinite space, had it not been for the resolute determination of character of some of its leaders; had it not also been for the powerful effect of the principle of permanent endowment and dedication, which in this country almost always ensures perpetuity to whatever it attaches to.

But I must say more than this. The history of the College for some time previous to the appeal to Chancery abounds in the strangest perils and vicissitudes,—incessant resignations,

withdrawals of resignations, long-continued abeyance of offices, discords, anomalies, inchoate lawsuits, arbitrations attempted and ending in nothing, imminent insolvencies, and every form of confusion. In the general administration the public had ceased to feel confidence. Nor do I know that that confidence has yet revived; for confidence is a plant of slow growth, as has been said, and not easily reproduced when withered. But though the number of students was not always kept up, and though the internal condition of the College cannot have been wholly unaffected, still it is but the truth to say that through all these troubles the substantial work of the College in the care and teaching of the students went on and prospered. I believe the College never failed to obtain the services of able and conscientious men, whether of the medical, the clerical, or the tutorial professions, to be in personal contact with the young men: and after all, the living men are the essential point; not laws, nor endowments, nor buildings, nor minute-books. The unerring test is the condition of that sensitive plant, the confidence of parents; they would never have continued to entrust their sons to you here, had you not in the main deserved it. It reminded me of the financial troubles which befel one, indeed more than one, of our great modern schools some years ago, and which were of the most serious kind; but the actual school work remained unchanged, and the boys continued their studies and their sports in undiminished number and unconscious indifference, as the fishes gambol about the bottom of the sea whatever storms may be on the surface.

To this, the personal and human work of the College, I shall recur by-and-by. At present I cannot but indulge a little imagination, and suppose myself a stranger unacquainted with the place, and ask, What *is* this College? Is it a medical College? But then what mean these theological persons, these embryo clerics, whom I see about? What is this Arts department? If you have these, why have you not more? We know the reply: we are the fragment of a larger enterprise—the survivors of a partial shipwreck. I remember the time when we taught, or said we would teach, law, and engineering, and architecture. I believe we would have undertaken to teach anything. So thought the frog when it would rival the ox; so did a College which dreamed of being a University. Why did it so dream? Well, for myself, I must say that I rather acquiesced than urged it on. But in those remote days I was an enthusiastic young man; so, I suppose, was Mr. Cox; so, undoubtedly, was my excellent old friend Mr. Chancellor Law, for so he is still, as I am well assured. He may be what we call old, but youthful in mind he will ever be—a sort of mental "Bacchus ever young." We attempted to lead where we should have followed: to force a public demand which existed not. And here is the answer to the question above. I said we are survivors; but we are not casual survivors. That which floats is that which is buoyant—which is borne up from beneath. That which exists here is that, as I believe, which the public wants. The theological department has been approved by experience, and gives an opening which, though not largely needed, *is* sometimes needed, and supplies a real want in the English Church. The culture in Arts is, on the intellectual side, the performance of the original and essential purpose of the College as respects its medical students, which we believed to be one urgently called for. Like so many of our institutions, I am not concerned to defend the present constitution and character of the College on any theoretic ground. I believe it offers to supply a practical demand; and if ever that demand should extend to further objects, there is nothing in our position or circumstances here which need prevent our meeting that demand.

I do not pause to explain or to justify the present system under which the government of the College is constituted. It has been but recently set on foot. Most of you know well the toilsome diligence with which it was elaborated and carried through the different tribunals concerned with it; you know the eminent character of many of your chief townspeople, who, as I have myself seen, are willing to give freely of their time, thoughts, and means to the affairs of the College. I have no doubt the renewed experiment will have a fair trial, and I have confidence that it will bear that trial successfully. One detail only I will notice. I much rejoice in the easy accomplishment, when once fairly set about, of that which had so often been thought of, the amalgamation of this College with Sydenham College. A medical college no doubt it is in its leading character, and will probably ever continue to be. Now, on the subject of the direct training and instruction of medical students as such, and on the general question of the condition and the need of the medical or the surgical Faculty in this country, I have no knowledge and have no observations to offer. From time to time, indeed, as I presume is the case with many others, I happen to come across indications that in the judgment of some active-minded members of those professions there are great imperfections in their condition, and large measures of improvement are called for. Very lately I received a paper from a gentleman, I believe of much distinction, and of whom, especially at this time and in this place, we should speak with due respect, for he is president of one of the sections of the Social Science Association. The paper, which I have here, was submitted some months ago, with what result I do not know, to the Government by a joint deputation from the Medical and Social Science Associations. It deals with what is therein termed State Medicine, which appears to mean the public exercise of the business of physicians and surgeons in connexion with Government departments and organised bodies of all sorts, as distinguished from private practice among families and individuals. Under eighteen heads Dr. Rumsey enumerates the various functions of this kind which are now performed. Under nine further heads he classifies similar functions which are not performed, but which ought to be so, and he then proceeds as follows.....

It must be admitted that these allegations, coming so long after a Medical Council has been established by Act of Parliament for the very purpose, as I apprehend, of watching over and promoting these very objects among others, are rather startling. I trust that there are no corresponding shortcomings as relates to the other branch of the question, the private practice of the profession. For myself, though I cannot say that I have always entire faith in what the doctors say, I have the utmost confidence in what they do, and should feel much uneasiness if required to believe that the system on which they are empowered and accredited to act was a seriously faulty one.

But though on the question of medical education in its professional aspect I have nothing of my own which I could presume to offer to such an audience as this, it has occurred to me that lately, as a member of the Schools Inquiry Commission, I have been called on to hear evidence bearing on this question from some men of the highest eminence in the profession. I say "bearing on this question" because medical or other professional education was not our proper province, and we asked for the assistance of our medical witnesses with a view to elucidate the general educational condition of the middle class. But in doing so they could not but incidentally throw much light on the particular branch of that condition which concerns us to-day.

Our witnesses were only three in number, but I need not tell you that for authority they cannot be surpassed; they were Mr. Paget, Dr. Gull, and Dr. H. Acland. It is not likely that many here have had the opportunity of seeing their evidence, and perhaps I cannot better occupy part of my time than in reading some rather considerable extracts from it, and commending them to the attentive consideration of the authorities of the College. It will need, I think, hardly any observations of mine in the way of addition or explanation.

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Now what I have read relates mainly to the intellectual and instructional view of the question of medical students' education. It was not chiefly with this in my mind that about thirty years ago I (and I should expect to find others who would say the same) first took an interest in this School—as it was then called—of Medicine and Surgery. It was from a consideration of the importance of setting an example here, which we might hope would in future years be largely followed elsewhere, of the practicability and advantage of an institution where medical students might receive in full measure the humane, the moral, the disciplinary, the social, the religious benefits of the ancient system of English collegiate education, that we joined so hopefully in the work. It was from a sense that, while needing them as much as any or more, those students were as ill-circumstanced as any students, or more so, in these important respects. I well remember, in the very early days, quoting, in the presence of the venerable Dr. Edward Johnstone, then our first Principal, an injurious—nay, I might say a ribald proverb, I believe of the middle ages: "*Tres medici, duo athei.*" I remember the indignation with which the venerable man repelled the imputation. But I also remember his acquiescence in what I ventured to suggest—that unless there were some tendency, according to the evil of our nature, in medical studies to realise that proverb, much of the ground of the necessity which we believed to exist for such institutions as this must be abandoned. Nor should we wonder too much at the existence of such a tendency. We know too

well the perverseness which has often led men of the highest ability and the deepest acquaintance with the works of the Creator, away from the Creator to the cold regions of materialism and abnegation of revealed truth. We know such cases as those of Laplace and Buffon. And we thought, whatever changes the progress of science would involve—nay, whatever new light may be thrown even on moral truth and religious doctrine, their broad and ancient foundations at least,—the principles of the philosopher and of the Heavenly Teacher—the principles of the ethics of Aristotle and the Gospel of Christ—were not now to be sought for, but to be applied. And we held that for these young men, as for others, the best application was in the collegiate life—the orderly discipline, the stated hours, the friendly association with superiors and with equals, the ἦθος, the *religio loci*, the social atmosphere, the frequent and united worship, the consecrated chapel. We looked, in so far as we might succeed, for our full return in the blessings of parents and the approval of families.

For if these great principles, this human and divine *substratum* to all instruction and all education, whatever be its special destination, be of moment in any class of life—of moment to the members of that class, of no less moment to society,—surely it is so pre-eminently to the medical class. Where are the men for whom we should more fervently wish, than for them, a lofty tone of character, a sense of the dignity and gravity of their mission, a pious and consistent walk, a spirit of large observation, a sobriety of judgment, a knowledge of things new and old, and all those many more qualities which we believe are fostered by a sound and Christian education? For one, I cannot express more strongly than I feel, the social importance of a high standard of character as well as attainment being set and maintained for the medical profession. "Honour a physician," says the wisdom of the son of Sirach in that book which, though we do not reckon it among our inspired books, assuredly falls not far short of them in its combination of admirable plain sense with spiritual insight, the Book of Ecclesiasticus (xxxviii., 1)—"Honour a physician with the honour due unto him for the use which ye may have of him, for the Lord hath created him." True was the instinct, even if pushed too far, which in old times set apart the science of medicine as something specially superhuman and heavenly. "Blessed art of healing," says Mr. Carlyle of it when in worthy hands, "once again divine!" Surely it partakes of the value and sacredness, as it has been called, of the subject with which it deals—the value and sacredness of human suffering—"a token," in the solemn words of the writer I am quoting*—"a token of God's presence, a form of His countenance." Nor has there been found, perhaps, for Him, the benefactor above all benefactors of the human race, a worthier or more endearing appellation than this, the Physician of Souls.

Few indeed there are who, such is our condition here, pass through life without frequent intercourse with the family surgeon or physician. Even of these we may say nearly the same as of others. But as to those others, the vast majority of us, in our hours of anxiety or of agony, for ourselves and still more for others,—in the slow-wasting consumption; in the ungoverned delirium; in the unrest and sleeplessness of pain; in the crisis of hope and of fear, the verge of maternity; in the sudden and perilous accident, turning in a second the placidity of age and the merriment of childhood into the tumult of trepidation and the haggardness of suspense; in that trial of which none will make light but those who know it not, causeless nervous or mental depression,—in these, and so many more I could name, who is it for whose approaching footstep we so long, on whose every word we so depend, hoping when he bids us hope, despairing when at length his hands hang down, when the resources of his craft are exhausted, and he too has to confess that he is but the secondary instrument in the power of the Unseen Disposer? Let not poor human nature be too hastily blamed, if at such seasons it may sometimes fail to hold with due firmness its sense of Who it is in whose hands really are the issues of life and of death, of sickness and of health, and lean too much on His delegated ministers. Who is there again, I ask, whom after and because of such intercourse as this, we are more disposed to take into the confidence of our daily life, to make the friend as well as the adviser, the witness and the partner of the joy of recovery as well as of the sorrow of suffering? Great indeed must often be the sympathetic grief of the practitioner, if he has a human heart, in the scenes of woe which he must see without relieving, or only slightly relieving it; but great also must often be his sympathetic joy when his efforts are blessed with full success,—the joy of simple sympathy crowned with the consciousness that, in the hands of Providence, the returning happiness which he sees is due to his own skill, and is the reward of his early and laborious culture.

So deeming and so hoping, I return with satisfaction to a share in the administration of this College, and commend its welfare to the good wishes and exertions of the inhabitants of this town and neighbourhood.

* Dr. Pusey: Sermons by contributors to "Tracts for the Times," iii., 300.

FATAL CASE OF ACUTE PROGRESSIVE PARALYSIS,

FROM SOFTENING AND DISINTEGRATION OF THE SPINAL CORD, ESPECIALLY IN THE ANTERIOR COLUMNS; WITH LOSS OF MOVEMENT, WITHOUT CORRESPONDING LOSS OF SENSATION.

BY GEORGE HARLEY, M.D., F.R.S.,
FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS, PROFESSOR IN UNIVERSITY COLLEGE, AND PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

TOGETHER WITH AN ACCOUNT OF THE POST-MORTEM APPEARANCES.

BY J. LOCKHART CLARKE, ESQ., F.R.S.

THE case about to be recorded is not only an important one in a scientific point of view, on account of its being a marked example of a comparatively rare form of disease, but it has also an additional though melancholy interest attached to it, in consequence of its having occurred in the person of the eldest son of a member of our own profession. It need scarcely be added that it is with the full concurrence of the family that the case is brought under the notice of the profession.

The particulars of the attack, together with some remarks upon it, were written out immediately after my visit to the unfortunate sufferer. They are headed:—"Acute Progressive Paralysis"—a title which, in my opinion, admirably expresses, in general terms, the nature of the affection under which the patient laboured,—much better indeed than the word "Myelitis" would have done—a term which is so often made to include all forms of softening of the spinal cord, quite irrespective of the morbid anatomy.

On the afternoon of Saturday, March 18, 186—, I was hastily called to the son of Dr. W——, and found Messrs. Newton and Jakins in attendance. The patient, a well-developed, strongly built youth, of seventeen years of age, appeared to have been quite well until a month previously, when he began to feel a slight aching in the limbs—thought it was nothing very particular, only a little cold, until Sunday, the 12th instant, when he first experienced a numbness in the legs and a slight stiffness in the back of his neck. Still thinking it an ordinary cold, he, by the advice of his aunt, rubbed his neck with liniment before going to bed.

On the following day, that is to say Monday the 13th, he got up, dressed himself, and went as usual to office.* During the course of the day he observed for the first time that he had a trifling difficulty in walking. This was five days before I saw him.

On the morning succeeding, Tuesday the 14th, the difficulty in walking had increased, and he found that he dragged his limbs slightly. He was still, however, able to go to office, but in a few hours afterwards, while sitting on a high stool in the office, he began to feel as if he were paralysed, and became so bad that he had to be taken home in a cab. On his arrival at home he could not manage to walk up-stairs; but once up and in his bed-room he stood and undressed himself and went to bed. The next day he felt somewhat better, but on the next again, it was thought advisable to have medical advice, and accordingly Mr. Jakins, of Osnaburgh-street, was sent for. When Mr. Jakins first saw him on Thursday the 16th (two days before his death), the pulse was 66, the tongue furred, and the pupils dilated. He complained of no pain, only that his legs were paralysed. The bowels were sluggish but not particularly so, and he made water naturally. One thing that specially attracted Mr. Jakins' attention, was a peculiar expression which passed

* He had only a few weeks previously come up from the country, and entered as a junior clerk in an insurance office.

over the patient's face while talking—a sort of vacant laugh, as if the muscles of the face were slightly affected; it was very transient, vanishing in a few seconds, and did not again reappear. There was then no difficulty in speaking, but the patient complained that much speaking made his tongue tired. He had no difficulty in swallowing. Mr. Jakins prescribed 1-30th of a grain of strychnine every four hours. At his next visit, Friday the 17th, the pulse was 70, and the patient's general condition seemed worse.

Next morning, Saturday the 18th, the unfavourable symptoms had all become exaggerated. The pulse had risen to 90—swallowing was difficult, the patient complained that he felt uncomfortable lying in bed, and preferred sitting in an easy chair. He could not bear to have his legs elevated even to the level of the trunk.

Mr. Jakins now sought the co-operation of Mr. Newton, of Wimpole-street, and between three and four o'clock of the same afternoon I was requested to join them in consultation.

On entering the sick chamber I found the patient in bed, lying on the left side with the lower extremities completely paralysed, the upper partially so. He could still move his right arm, but had not sufficient power to squeeze my hand. His intelligence was perfect. He complained of no pain.

The motor nerves of the limbs were alone affected, the sensory were all right, for he felt the slightest touch at any part of the paralysed tract.

Respiration was slow and laboured—each inspiration being made with evident effort. The pulse was 120. The tongue furred. The temperature felt natural to the hand. There was no fever. He spoke quite distinctly, though slowly, as if he had a slight difficulty, not in selecting, but in articulating, his words.

He complained that this morning he had felt want of power in voiding fæces, but had no loss of power over the bladder. He made water naturally; thought that perhaps less straining than usual was required. The power of swallowing had been lost within the last few hours, but his sense of taste remained still unimpaired. The paralysis of the whole motor nerve-system was gradually creeping upwards.

It was melancholy to see this poor lad, who to look at was the very picture of robust health, perfectly unconscious of his danger. The entire absence of pain at this stage of the disease had lulled to sleep his fears, and now on the very verge of eternity he was replying to our questions with a friendly smile. Often has physiological knowledge stood the physician in good stead at the bedside, but never was its aid more useful than on this occasion, for a few leading physiological questions and one or two tests gave the clue to the whole clinical history of the case. The past, present, and future were indeed but too clearly revealed. For complete paralysis of the spinal motor-nerves, with their corresponding sensory branches unaffected—total absence of pain, with perfect intelligence, and yet the unconscious dying, as it were, by inches—are to the experimental physiologist but familiar phenomena. The only difference in the case before us and that of animals experimented upon, being that while in the one inflammatory action and disintegration of nerve fibres are the cause of the symptoms, in the other the phenomena are due to the effect of poison. Conia and woorara are the toxic agents which act most powerfully in this way. More especially woorara, which produces the most perfect paralysis of movement, without any corresponding loss of sensation, while it at the same time leaves, as in the case before us, the intellectual faculties unimpaired. Armed with this knowledge, it required no great power of divination to foretell that, notwithstanding the cheerfulness of the patient and apparent absence of all urgent symptoms, he had at most but an hour or two to live. This opinion was, of course, based upon a calculation made of the progressive march upwards of the disease along the motor-spinal tract since the morning.

The physiological and clinical history of the case will be more readily understood if I now recapitulate a few of the leading facts indicative of the *progressive* nature of the affection; for although there were early indications of the anterior columns of the cord being implicated throughout almost their whole extent, the total annihilation of function as manifested by the paralysis was gradual and progressive. There was—

1st. The paralysis of the lower limbs, showing that the sacral portion of the spinal cord was the part which earliest became seriously affected.

2nd. Succeeded the paralysis of the abdominal muscles, showing the implication of the lumbar portion of the cord.

3rd. Next followed the paralysis of the lower intercostal muscles, indicating the period when the disease had reached the dorsal region of the cord.

4th. At the time of our consultation it was evident that the annihilation of function had extended to nearly as far up as the lower portion of the cervical region, for not only was there

a. The partial paralysis of the upper extremities, showing the implication of the roots of the brachial nerves; but

b. Great difficulty of breathing, partly from the act of expiration being unassisted by the paralysed abdominal muscles, and partly from that of inspiration being equally unaided by the intercostals, especially the lower. Indeed, at the time I am now speaking of, the function of respiration seemed entirely to depend upon voluntary effort, assisted by the somewhat modified, though still apparent, involuntary action of the diaphragm. So much so, indeed, was this the case, that the patient's attention could not be removed from the respiratory function without causing an immediate increase in his difficulty of breathing.

5th. The difficulty in swallowing was on the increase, and the patient's power of vocalization was gradually diminishing.

Such being the then condition of the patient, it was impossible to shut one's eyes to the fact that the poor lad had but two or at most three hours to live; for, as is well known, as soon as the middle portion of the cervical region of the cord becomes gravely implicated, the phrenic nerves become paralysed, and suffocation is the inevitable result. The respiratory process cannot be sustained by voluntary effort alone; and even if it could, the muscles of forced respiration would in their turn become paralysed, for those of the shoulders also receive their nerves from the cervical portion of the cord.

On communicating the above views to the gentlemen with whom I was associated, they at once concurred in the opinion that not a moment was to be lost in telegraphing for Dr. W—— (who was unfortunately at some distance in the country), in order to give him the chance—although it was but a most forlorn one—of again seeing his son alive. Our treatment was at the same time adapted to this end—not cure, but merely the prolongation of life. With this view, therefore, an enema, consisting of strong beef-tea, brandy, and the tincture of belladonna, was ordered to be administered. The belladonna was added from its supposed specific effect in counteracting hyperæmia of the cord, by causing contraction of its capillary blood-vessels.

The strychnine mixture had been already discontinued by Mr. Jakins, after the patient had taken twelve doses, that is to say, a quantity of strychnine amounting in all to ⅜ of a grain.*

In saying that the patient would inevitably be suffocated as soon as the cervical region of the spinal cord became gravely implicated, in consequence of suspension of all respiratory effort, the word "gravely" has been intentionally employed, for it is evident that the entire motor tract, from the bottom to the top of the spinal cord, was already more or less affected. The want of power the patient had in voiding the fæces is proof of this, in as far as the lower portion of the cord is concerned, while his difficulty in swallowing and impaired vocalization is equal proof of the uppermost portions being also implicated. Facts which are the more surprising, seeing that there was an entire absence of any signs which could lead to the supposition that the sensory tract was also affected, for it is almost impossible for one to imagine that such extensive longitudinal inflammatory lesion of the anterior columns could exist without, to some extent, transversely implicating the neighbouring sensory portions of the cord.

There is to my mind, however, a much easier way of accounting for such entire absence of sensory paralysis in a case of this kind—namely, that serious pathological changes must exist in the nervous system before the lesion is made manifest by objective phenomena.

The spinal cord being composed of innumerable nerve bundles, and every nerve bundle being made up of many individual nerve fibres, it is easy to see how if a single nerve tube in each bundle remained intact, it could conduct impressions to the brain, although all its fellows were disorganized. Just in the same way as a single wire in a submarine telegraph cable will suffice for the transmission of messages, although all its fellows be so damaged as to render them useless. Moreover, it will be presently seen that this theory is supported by the anatomical conditions which were found to exist in the cord.

The poor patient succumbed, asphyxiated in the manner predicted, just two hours after our consultation, and the post-mortem was performed on the following day. Unfortunately I was unable to be present at the autopsy, in consequence of an unexpected call into the country. Mr. Lockhart Clarke, however, kindly took my place, and the following is his valuable report both of the naked eye and microscopical appearances:—

Examination of the body (March 19) twenty-one hours after death.—Rigor mortis was strongly marked. There was very

* See Author's paper on the Action of Strychnine on Spinal Cord: LANCET 12th July, 1856, and *Phil. Trans.* 1865.

great discoloration about the shoulders and back, from gravitation. When the body was turned over a considerable quantity of frothy mucus, coloured with blood, escaped from the nostrils, and was followed by a stream of very dark and almost black blood. On making incisions along the sides of the spinal column, a great deal of the same kind of blood flowed very freely; and on carrying an incision through the integuments of the occiput, an extraordinary large quantity—certainly more than a pint—escaped in a rapid stream.

Spinal Cord.—The vessels on its surface were much congested. From the lower part of the eighth dorsal to the first lumbar nerves, the surface of the anterior columns was raised at numerous points into small hemispherical and softened eminences, of about the diameter of a mustard-seed. In some places these elevations were isolated, in others they were closely aggregated into groups. On making a transverse section of the cord at the ninth dorsal nerves, its substance generally was found to be soft and vascular. A small piece scooped from the softened surface of the anterior columns, and examined under the microscope without further disturbance, and without covering glass to avoid compression, showed the nerve fibres to be exceedingly damaged. With a few exceptions, it was impossible to distinguish the axis-cylinder from the white substance or medullary sheath, which was either ragged, puckered, wrinkled, or granular, or partially stripped from the axis-cylinder.

Throughout the whole of the conus medullaris and lower parts of lumbar enlargement there was no perceptible alteration of structure in either the white or grey substance, and through the middle of the same enlargement the only morbid appearance was great congestion of the pia mater, with softening of the surface of the anterior columns, involving the anterior roots, between which some of the fibres of the columns had undergone grey disintegration, as had also some points at the surface of the lateral columns. Indeed, a much broader line than usual of the connective-tissue surrounded the whole of the cord. The surface of the posterior columns immediately below the thickened pia mater had not escaped, for it was a little damaged by softening. On a level with the first lumbar nerves, areas of fluid disintegration surrounding bloodvessels began to make their appearance in the grey substance at the sides of the canal; and one long tract, in a semi-fluid state, extended, on the left side from before backward, through a great part of the posterior horn, and upward along the cord for about half an inch, when it suddenly disappeared. Immediately above this point, however, the deep portion of the posterior column of the same side presented an irregular and fluid area of considerable size, in which nerve-fibres could be seen in a state of partial disintegration. Transverse sections at this part showed the unusual appearance of two central canals instead of one, each surrounded by a regular layer of columnar epithelium, and further separated from the other by a confused heap of the same bodies. This appearance, although uncommon, must not be regarded as the result of disease.

On a level with the lower part of the twelfth dorsal nerves, the grey substance surrounding a bloodvessel on the right side of the canal, and at the base of the posterior vesicular column, was reduced to a state of granular fluid, and a few sections higher up a similar lesion was observed in the corresponding part on the left. The anterior decussating commissure at the bottom of the anterior median fissure was also damaged by disintegration of its fibres. The surface of the posterior columns was somewhat softened, and that of the anterior columns had suffered in a similar way, but in a greater degree. On all sides the pia mater was thickened and congested. These lesions, however, rapidly diminished on ascending the cord for a short distance, so that at the upper part of the eleventh dorsal nerves scarcely any morbid appearance was observed in either the grey or white substance. On a level with the tenth nerves, the principal lesion consisted in the softening at the surface of the anterior columns, at the entrance of the anterior roots; for although the grey substance was congested, it presented only a few marks of structural change. At the ninth dorsal nerves, however, disintegrations like those already described re-appeared in the grey substance, at the sides of the central canal, and at the bases of the posterior horns, while the surface of all the white columns, but particularly of the anterior columns, was much softer. These structural changes, however, rapidly diminished on ascending the cord, so that nearly all the upper two-thirds of the dorsal region were only slightly affected. The greater part of the cervical enlargement presented no abnormal appearance, except congestion of its substance generally, and of the surrounding pia mater, particularly at the anterior columns, where a granular exudation in some places enveloped the roots of the nerves. But at the upper third of this region several of the bloodvessels on both sides of the central canal, and in the posterior commissure, were surrounded by circular and oval areas of granular and fluid exudation, which continued upward, with some increase as high as the second cervical nerves. For about the same length of the cord also the deep portions of the posterior columns between the horns were softened to a considerable degree; and the anterior roots of the nerves were in some places still enveloped in exudation from the surface of the pia mater.

From the first cervical nerve upward nothing remarkable was observed. The whole of the medulla oblongata and fourth ventricle appeared to be perfectly healthy.

THE CURABILITY OF CONSUMPTION.

To the Editor of THE LANCET.

SIR,—I think that Dr. Davy has, in his letter in your last impression, misinterpreted the passage he quotes from Dr. Gull's recent Address in Medicine.

I understand the passage to mean, not that Dr. Gull does not believe that consumption is sometimes cured, but that cases of wasting disease, with perhaps also other symptoms erroneously regarded as indicative of consumption, are recorded as cases of "so-called consumption cured."

I think there are few physicians who do not believe in the occasional arrest of the disease for many years, and in some instances for life.

Towards the close of his remarks Dr. Davy asks for a definition of phthisis. Our knowledge of the subject is far from complete; at the same time, I see no difficulty in supplying Dr. Davy with what he requires. Phthisis means wasting; it also means spitting, and is, I believe, generally regarded as synonymous with consumption, which is usually understood to mean tubercular disease of the lungs, although sometimes—but not often, I think—carelessly or erroneously applied to other causes of phthisis, or wasting, the result of other diseases of the lungs than the tubercular, and of diseases of other organs than the lungs. It is impossible, if we be influenced solely by etymology, to restrict such general terms as phthisis, consumption, and wasting, to one form of disease of one organ; but is it not better to fall in with what long habit has rendered convenient, and authoritatively limit the old familiar Greek and Latin terms, phthisis and consumption, to proved or presumed tubercular disease of the lungs? We shall not have much difficulty in finding names by which to qualify other and comparatively rare forms of phthisis, whether pneumonic but not tubercular, or tubercular but not pulmonary.

In diagnosing a case of phthisis pulmonalis as tubercular, and therefore as phthisis or consumption *par excellence*, we must be guided almost entirely, if not quite so, by the diathesis of the patient, the two chief elements of which are personal appearance and family history. Stethoscopic and other auscultatory phenomena may in most, but not in all, cases point out the locality of the disease, and its probable pathological stage, but not its nature or cause; in other words, tubercular disease of the lungs cannot be diagnosed by auscultatory signs alone, however definite.

The "whole genus of chronic affections" spoken of by Dr. Gull refer, I think, to non-tubercular cases of phthisis pulmonalis, and not to "so many troublesome additions to, and consequences of, this pulmonary complication," as Dr. Davy suggests.

I hope I have attached the right meaning to Dr. Gull's words; if not, perhaps Dr. Gull will kindly place his meaning beyond misapprehension on so important and therefore interesting a subject.—I am, Sir, your obedient servant,

Littlemore, Sept. 29th, 1868. WM. J. MARSH.

M. AUZIAS TURENNE ON RABIES.—This ingenious investigator, in a paper lately read before the Academy of Medicine of Paris, endeavours to establish a parallel between the phenomena of rabies and those of syphilis. It will be remembered that Marochetti considered that the virus, after having been absorbed by the wound, enters the circulation, and then gathers under the tongue. From the third to the ninth day little vesicles or pustules appear on either side of the frenum linguæ; they contain the virus, and are called lyssæ. Marochetti believed that by cauterising these vesicles the further progress of the disease might be stayed. Experience has not confirmed his views; but M. Turenne, starting from these phenomena, has attempted to liken rabies to syphilis, and the lyssæ to the infecting chancre.

THE LANCET.

LONDON: SATURDAY, OCTOBER 3, 1868.

THE First of October has come and gone, and our present number includes not a few of the addresses, in full or in abstract, with which the medical students of this year have been introduced to the great work of the session. Lectures of this nature have often been severely criticised. But a little reflection may satisfy anyone disposed to be censorious that an introductory address is just one of those things which it is difficult to do in such a way as to gain the praise of being both original and practical. It would be easy to make any address to students interesting and varied, were it not that the speaker is confined to the plain duty of starting a group of young men on a great piece of hard duty, and that it should be his object to distract their imagination as little as possible, and send them into their work with a strong longing for the ascertainment of facts, of the positive data upon which their ultimate skill and judgment are to depend. The part of these addresses which most of us who have been in the habit of reading them for a few years probably find most tedious is the moral part—the advice to be diligent and dignified and Christian. But, in truth, the great success of an introductory lecture must be here. It is the teacher's great opportunity for making a moral personal impression upon the student. In ulterior stages the student will know the teacher only as a man of science. During the hour of the introductory lecture the teacher is to the student a "preacher of righteousness." If he does his duty well, and manages to make the student feel that a great but short opportunity is immediately before him, the use or the abuse of which is to determine his future success, his peace, his sense of self-respect, and the character of the contribution which he is to make to the reputation of the profession he is entering,—if he produces any effect of this kind, he has succeeded; if he fails to do so, he has failed indeed. The first hour of a student's education is well spent in grave words. If he be wise he will heed them, and may come to shine as a "star in the firmament." If he is not wise, if he does not perceive the great wisdom of beginning work in a serious mood and under the influence of high moral feelings, he is not likely to work well, or to do much for the reputation of his profession. In truth, the moral and Christian tone of these introductory lectures is an essential feature of them.

But though we think the moral part of these addresses of the very first importance, without which they would be at once unsuccessful and unworthy of the profession, whose brightest ornaments have been men of high moral reputation, we proceed to observe that they contain many suggestions of a practical character, and some reflections of a highly scientific order, which will serve to impress on the student who is beginning his career the nature of the duties and the difficulties which are before him. We are very happy to be able to place in full before our readers the remarkable address of Dr. BURDON-SANDERSON, at the Middlesex Hospital. Students may feel themselves favoured and flattered in having such an exposition of the present state of Medicine and its relation to collateral sciences from one so authoritative and able as Dr. SANDERSON. In truth, it is an address for very advanced and serious students of medicine, including practitioners. The principal part of the lecture is devoted to a consideration of the scientific mode of studying disease. This leads Dr. SANDERSON to allusions to the freshest and latest discoveries of chemistry and physics in their relation to vital processes. Many will think that he goes too far in his expectations of chemistry and physics, and that he is disposed to give too physical a character to life and organisation. But it will be seen that he is himself conscious of near mysteries, and especially of that old great mystery "the power by which matter is transformed into living tissue." We have no business to speak of mysteries till we have exhausted our means of knowledge. Till then the admission of mystery is often an affair of lazy ignorance rather than of true reverence. Dr. SANDERSON'S candid admissions of the great value in medicine of a sound empiricism or experience, and of the fact that advanced and scientific pathology has as yet done little for practical medicine, with his thoughtful explanation of the same fact, will only the more secure for his address the consideration of all members of the profession, whether viewing medicine from the urgent stand-points of general practice or from the serener and more scientific regions. Dr. SANDERSON'S illustrations of the discoveries of the last few years justify his hope that the supremacy of experience must some day give way to the teachings of strict science; but, perhaps, the time is not quite so near as Dr. SANDERSON thinks.

Conspicuous amongst the addresses this year is one by Lord LYTTELTON, at Queen's College, Birmingham. It is a pleasant novelty to have a layman of rank and intelligence like his Lordship giving the starting-note to Birmingham students. And it is a high-toned moral note. His Lordship modestly abstained from much detail of criticism or advice as to medical study; but he insisted with eloquence and force on the supreme importance to medical students "of a lofty tone of character, a sense of the dignity and gravity of their mission, a firm and consistent walk, a spirit of large observation, a sobriety of judgment, a knowledge of things new and old, and all those many more qualities which we believe are fostered by a sound and Christian education."

We have not space to notice many good points made by various lecturers, but they will be found in our earlier columns. Mr. THOMAS SMITH urged the wisdom of taking clerkships and dresserships, and, before entering practice, of becoming house-surgeons, or assistants in private practice. Dr. MOXON'S address is a curious mixture of the figurative and the practical. He charges the Medical Council with carrying their discipline too far: "they fill every hour of your day." It is scarcely fair to say this; for the Medical Council has not as yet delivered its opinion as to the use that students should make of their hours, or even of their days. They have contented themselves with naming subjects in which students should be examined, and with expressing opinions as to the mode of the examinations. On the details of study they may be expected next year to give some recommendations, as the result of Dr. PARKES'S Committee on the subject; but as yet they have delivered no opinion. Dr. GUY, Mr. JAMES LANE, Dr. BARNES, and others, in their respective addresses, went into some de-

tails on the subject of medical education; Dr. GUY especially objecting to the demand of the student's attendance on more than one course of lectures on any subject, however important. Mr. LANE'S address was a very good one, barring a little too much depression at the postponement of Greek as a compulsory subject, and a too great tendency to draw disparaging comparisons between the preliminary training of the medical profession and that of others. Dr. BARNES'S lecture shows the share which Medicine has had in promoting the study of nature, and how creditably in our schools the competitive principle has been long acted on. He also discussed at some length the methods of teaching. On the whole, however, it is remarkable that more is not said in these introductory lectures about the disposition of schools to make such changes in the mode of teaching as the general opinion of the profession seems to call for. Mr. CRITCHETT, in a pleasant and eloquent address, to which our report does but scant justice, said a few words for specialism, and that assertion of the importance of hygienic studies which tends to promote the medical profession from its present function of combating disease to the higher duty of presiding over and guarding the public health.

Here we must leave the addresses, commending all of them to the attention of students. Medicine is becoming an increasingly difficult profession. But it loses nothing of its honourableness. It has no great prizes, as Dr. POLLOCK said in the course of his excellent and practical lecture; but it is a wholesome, dignified, and useful calling. If students are not very faulty indeed, they will have great pleasure in the practice of it, and will at least achieve ROBERT LEVETT'S amount of success:

> "The modest wants of every day
> The toil of every day supplied."

TRUTH, although a wholesome, is not by any means invariably a palatable thing. When a community like that of Brighton has grown into sudden and very remarkable prosperity, under the advantages of a magnificent situation, an invigorating sea-breeze, and easy accessibility from town, it receives most unwillingly the announcement that it is liable to lose its *prestige* from the fact that its filth and refuse, instead of being carried off and utilised, is either stored up beneath the surface, or cast into the now polluted sea. It is scarcely surprising, therefore, that our Report has been received by several of the local journals with a storm of ridicule and flat denial, unworthy of the name of argument. The *Brighton Observer*, for example, has a correspondent whose signature is "Tymothi Skrybble." His weak facetiousness appears as strongly in his writing as in his *nom de plume*. He would have us believe that our "lectures" would be more readily listened to by the authorities when visitors to the town are scarce, as between March and Midsummer. He thinks the members of the local Board would then have more leisure to digest unpalatable advice, and by that means something might probably be done to satisfy our complaining disposition. But alas! we cannot forget that the Demosthenes of the corporation, who used formerly to denounce all sensitive stomachs and up-turned noses as marks of affected ill-will, was compelled by the force of public opinion to declare that something must be done, for that the stench in the centre of the town was sometimes intolerable. Is not the Board composed of the same materials now? Was not the present imperfect scheme, although denounced by most eminent engineers, selected chiefly on account of its comparatively small expense, and because the town authorities were unable to comprehend the importance of looking far ahead? Nay, how is it that after an interval of six years less than four thousand houses have been drained? Even "Tymothi" himself is compelled to acknowledge that the town authorities ought to proceed more rapidly, and that there is no reason why greater despatch should not be exercised.

"Skrybble" has also displayed his genius in calculating that according to our facts thirty-eight inhabitants fill a cesspool yearly; an extraordinary fact, which, in his opinion, indicates that there must be something very peculiar in the Brighton atmosphere or in the Brighton mode of life to induce so large a manufacture of manure. But we shall astonish him still more by informing him that a much less number will fill a cesspool in the time specified, provided there is no escape. Each individual in Brighton receives for his personal and household use about ten gallons of water daily, or considerably more than one tun per month. This is all converted into sewage, which in many cases is carefully and effectually stored up. It is obvious that the produce of a single household consisting of seven or eight persons, to say nothing of visitors, would be amply sufficient to fill the largest cesspool.

The *Brighton Gazette* is still less complimentary. Our Report is said to be "blundering, and only half informed." Nevertheless, it is accepted gratefully when its notices are favourable. The editor fails to understand that "vast" improvements can be "tardy," although it is apparent that much vaster are required. He would try to persuade us that 10,000 out of 14,000 houses have been actually drained, although he knows that many of the sewers have scarcely been begun, and that it will be months, if not years, before they will be in full operation. It was therefore but a mild expression to say that the progress is "comparatively small." It is gravely argued that 10,000 cesspools, to be eventually reduced to 4000 by the works in progress, can do little harm—a mere "gnat," in fact, at which we are supposed to strain, but unfortunately are not called upon to swallow. As a specimen of blundering we are told that the proprietors of Brill's Baths erected their pumping station at Hove, not in order to obtain *pure* sea water, but to escape the coal duty. Truly do we pity the inhabitants of Brighton if they are taxed so heavily that a company is compelled to expend £10,000 to escape the duty upon a few tons of coals. The explanation is too ridiculous to entertain, as also is another that we heard,—viz., that there was no space to erect an engine and force-pumps on the central site. Lastly, we are gravely told that the Brighton system of drainage is the result of much careful consideration, and has been carried out by competent engineers, as if that were a justification of what "common sense emphatically condemns."

Fortunately for the inhabitants of Brighton they have at least one journal which dares to acknowledge the truth. The *Brighton Times* boasts legitimately that it has systematically exposed the dogged obstinacy of the authorities in ignoring the drainage of the town, and has condemned the monstrous and fatal idea of carrying sewage to the sea as one of the greatest mistakes that Brighton ever made. "*If*," says the editor, "the sea refuses to carry away the whole of the sewage, or to render it innocuous, with the smaller portion now

drained into it, how will it be when the additional drains, to the extent of thirteen miles, pour it forth from the 10,000 houses yet undrained? The result of this suicidal scheme when in full operation may be safely predicted. The whole scheme is a gross blunder, and if persisted in to the end, will leave tons upon tons of filthy sewage that neither the sea nor any other power will ever clear away from the shingly beach." Not one word of this is out of place. Let Brighton look to her sanitary laurels lest she lose them. The evil lies in the very notion of putting sewage into the sea, and we believe that a fatal persistence in the present system must eventually destroy the reputation of the town as a healthy bathing place, a matter of far higher importance to the inhabitants than an augmentation of the rates.

THE institution at Epsom, which forms such a splendid monument to its founder, JOHN PROPERT, cannot be said to fulfil the desires of its numerous supporters and well-wishers in the profession if it fails to give those orphans of medical men who are elected to its foundation an education suited to their position in after-life. We are by no means anxious that every youth educated at Epsom should be induced, much less compelled, to embrace the profession of his father. Many of them may have no bent towards medicine, and the friends of others may not be in a position to bear the expense of their medical education, or to start them in professional life. Having regard to this latter class, it occurred to some of the benevolent minds connected with the College that certain of the medical schools might be induced to grant a free education to a worthy candidate from Epsom, and accordingly the staffs of St. Bartholomew's, University College, and Charing-cross Hospitals generously consented to found one free medical scholarship annually for the benefit of the Epsom pupils. At University College, however, the benefice was not confined to the mere lectures, &c., for, thanks to the exertions of Dr. CARR, of Blackheath, funds have been collected with the view of granting each holder of a free medical scholarship the sum of £50 (or more if the funds to be collected permit) for his expenses during the period of study. Already the sum collected would secure the first scholar's allowance, but it unfortunately happens that no pupil of the Medical Benevolent College has proved himself worthy of the double gift!

Of course, in founding free scholarships the authorities of University College, St. Bartholomew's, and other hospitals put forth some test of the ability and diligence of the student they were about to adopt. The former institution selected the Matriculation Examination of the University of London as its test, whilst the latter preferred the results of the class examinations at Epsom during the preceding year, stipulating that the candidate should gain three-fifths of the whole number of marks awarded in the usual subjects of a liberal education. The result has been that the intended candidate for the University College scholarship broke down in the Matriculation examination, and is therefore ineligible. St. Bartholomew's received a free student from Epsom last year, but this year no pupil with a leaning towards medicine has come up to the necessary standard, although in this case no extra test was applied to the knowledge obtained in the school.

In addition to these purely medical scholarships there are two other exhibitions open to Epsomians. One, the Forest Exhibition of £50 per annum for three years, is open to the whole school on the same terms as the St. Bartholomew's Hospital free scholarship, two-thirds marks being required; but the exhibitioner must within one year enter the University of Oxford or Cambridge, or King's College, London. The other, the Gilchrist Scholarship, of the same value as the Forest Exhibition, is decided by the result of the Matriculation examination of the University of London, and the successful candidate must proceed to graduate in that University in one of the four faculties of arts, laws, science, or medicine. Here, we are happy to say, a better fate attends the efforts of Epsom than in the case of the medical scholarships; for the Forest Exhibition, which depends upon ordinary school work, is filled up, and the Gilchrist Scholarship, in which other examiners are called in, has been awarded.

We bring these facts prominently before the profession with the object, not of damaging, but of improving the education at Epsom College. It does not require any great acquaintance with school matters to know that if pupils break down when examined by ordinary tests, of which they have full notice, there must be something radically wrong in their scheme of education or the method of carrying it out.

Medical Annotations.

"Ne quid nimis."

HOSPITAL FINANCE.

THE vast sums of money expended year by year in this metropolis for the relief of the sick, cannot but be a source of pride to all interested in the welfare of this country. Englishmen are, as a nation, disposed to be lavish of their charity, and it is an old, though not an idle, boast, that England is more philanthropic, as well as more wealthy, than any country in Europe. Her charitable revenues may be counted by tens of thousands, and a very large item of the total sum is spent within the walls of hospitals. It is desirable, however, to consider if the administration is carried on with a due regard to economy as well as efficiency; for the amount of useful work accomplished by these institutions must always bear a direct proportion to the proper conduct of their financial affairs. And, on this head, there are several points worthy the attention of all medical men who hold hospital appointments, whether of high or low degree. Are house-surgeons always sufficiently cognisant of the fact that extravagance in lint, rollers, and bandages indicates a large addendum of expenditure? Does the physician always recollect that the continuance of wine, fish, and other extras a week or ten days beyond the necessary period will produce a like result? In short, are not medical men, as a class, rather too much inclined to ignore the administrative and financial aspect of hospital relief? We are by no means disposed to urge that the slightest interference should be permitted in the performance of professional duty in the wards; but there can be no doubt that a little routine watchfulness on the part of the prescriber must, in its universal application, influence the revenues of a large hospital in a very considerable degree. A liberal margin must, of course, in all cases be taken for various shades of practice; and it will frequently be found that the inmates of one ward will consume twice as great a quantity of stimulants as those of another, because they are visited by different physicians. Making, however, all due allowances for variety of practice, it is probable that economy might be exercised without an impairment of efficiency if, for example, beer were substituted for wine, ordinary or full diet for eggs, fish, &c., as soon as the nature of

the case fairly permitted. There is a somewhat prevalent idea among junior practitioners that drugs are cheap. But the statistics of our metropolitan hospitals shew that the cost of medicines (especially those supplied to out-patients) is very large, and that quinine and cod-liver oil swell the drug account enormously. Is it not possible that physicians and house-physicians may assist in keeping this part of hospital expenditure within due bounds, if only in refraining from the use of costly "placebos"? These and other minor matters of administration should not be considered as beyond the province of any member of an hospital staff, though the most have but little time for observations unconnected with professional work. There is, we believe, in most hospitals a gentleman whose exclusive duty it is to look after these matters, and to act as a kind of "middle-man" between the professional and financial officers of the establishment. An appointment of this kind requires the exercise of much suavity, judgment, and discretion; and the hearty co-operation of the professional staff with such an officer must influence hospital finance in a far greater degree than is generally apprehended.

A FEW HINTS FOR STUDENTS ON THE MICROSCOPE.

THE use of the microscope has become of such importance in the investigation of disease, and is so requisite for the right comprehension of many anatomical and physiological points, that we need make no apology for saying a few words that may assist the student in obtaining what is required. He will find he can purchase a very useful instrument at any respectable maker's for from three to five guineas. This should include a good stand, with coarse and fine adjustment, and two object-glasses—an inch and a quarter-inch. The other materials he will need are a little chromic acid, methylated spirit, and glycerine, to which an equal quantity of concentrated solution of gum arabic has been added. A glazier will, for a few pence, cut him a dozen glass slides, free from flaw, and with a few thin covers, a pair of scissors, a sharp razor, and forceps, his equipment will be complete enough for all ordinary purposes. If he wish to make a section of any of the softer textures, as of the skin or mucous membranes, he may pin them out on cork, and allow them to dry. Then, on making fine sections, and the addition of a drop of the glycerine and gum solution, the details of structure soon become apparent. Other textures, like the spinal cord, glands, &c., may be macerated for a day or two in dilute methylated spirit, then in chromic acid, the strength of which is gradually increased till it assumes a straw-yellow colour, when, in the course of a few weeks, the parts will be found to have assumed a kind of leathery hardness, that enables most beautiful sections to be made from them with the greatest facility. The more advanced student may practise rubbing down sections of bone and teeth, or endeavour to inject some small animal, as a mouse; but this requires more extensive apparatus, and he should refer to one or other of the several excellent works devoted to the use of the microscope.

DEATH FROM THE USE OF ARSENIC BY A CANCER-QUACK.

WE are not insensible to the force of the reasons for giving quackery plenty of rope. Scientific medicine can afford only too well to smile at those notions of personal liberty which permit one subject to give, and another to take, advice in vital matters where both parties are, in the nature of the case, incapable of having a right judgment. A singular illustration of the liberty of subjects has just occurred in Scotland. A certain Mrs. Landess, of Paisley, was recovering in March last from an abscess of the breast, consequent, apparently, on weaning her child, when she chanced to meet a man who, from his own account, had been cured of cancer of the ear by one Alexander Paterson. She immediately conceived the wish to see Paterson, and to try his practice. He came, and pronounced the stangs that Mrs. Paterson had felt in her suppurating breast to be the symptoms of cancer, which he proceeded to attack heroically—that is to say, by first applying a blister to the breast, and then an arsenical ointment, which, according to the analysis of Professor Maclagan, was nearly half arsenic and half lard. Very naturally Mrs. Landess began to get worse. She had headache, vomiting and retching, great thirst, and the inflammation got worse and spread from the breast to the arm. She died in ten days. Arsenic was found in the various tissues and organs of the body. Professor Maclagan found no trace of cancer in the breast, and had no hesitation in saying that the patient had died of arsenical poisoning. The only defence set up for the "panel" was, that he had cured many cancers with this ointment, and that it had been laid on a little thicker than he ordered. The judge, Lord Ardmillan, said there could be no doubt that Mrs. Landess died from arsenic. But he summed up with great consideration to Paterson, observing most unnecessarily to the jury—"The Court is not here for the protection of the rights and privileges of medical practitioners; and a man, though not licensed, is not to be punished for culpable homicide unless the jury is satisfied that he acted culpably." He accepted the evidence of Paterson's cures, and ended a lenient address by the remark that "a mere mistake did not imply culpability." Fortunately the jury was firm in its perception of the guilt of such quackery as this, and returned a verdict accordingly, accompanied, however, with a recommendation to mercy. The "panel" was sentenced to four months' imprisonment.

We cannot but think that the judge in this case spoke much too lightly of the guilt of the quackery. The medical profession depends for its reputation on its own merits, and does not want the protection or the patronage of judges; but to have such conduct and such crass ignorance as Paterson's associated with such ideas as "a mere mistake" is very like an undue protection of quackery.

THE SUPPOSED INFLUENCE OF PETROLEUM OVER MALARIA.

WE have received some information as to the unusual good health and immunity from malarious disease of the imported labourers at the petroleum works at Makoom, near Jeypoore, in Upper Assam. It appears that Assistant-Surgeon White, of the 44th Regiment Bengal Native Infantry, in medical charge of troops, and Civil Surgeon Dihooghur, have officially directed attention to this subject. They made it an especial point of inquiry in consequence of the extreme unhealthiness for which Makoom has always been notorious. The Sepoy regiments lost so many men from malaria that the post was taken over by the police about four years ago; and it has since been found no less deadly to the Bengalees and Hindustanees of that force, so that only men who were either Doomers or Cacharries—both races who are known to thrive rather than otherwise in malarious localities—were sent to the place. As these Bengalee labourers could not be so well cared for as the Sepoys, it was expected that the mortality among them would have been something appalling. Assistant-Surgeon White was surprised, however, to find that only one death had occurred in two years out of a population of over sixty persons. The infants born in the place all looked strong and healthy. This immunity from malarious diseases he attributes to the protective influence exerted by the gases given out by the petroleum against the effects of jungle miasma. Ulcers or sores on the extremities, which are among the greatest afflictions of the imported labourer in Assam, have likewise invariably healed rapidly in the labourers employed at the petroleum works.

The question is one of some political and economical importance as regards the future of the district. A fearful loss of life among immigrant labourers has been incidental to every

other branch of European enterprise. Colonel Hopkinson, the agent to the Governor-General N. E. Frontier and Commissioner of Assam, has, we believe, directed the attention of the Bengal Government to the statements recorded by Assistant-Surgeon White. Petroleum workings are now conducted pretty well all over the world, and probably at some localities as malarious as Makoom. Pennsylvania, Trinidad, Seyssel, the Burmese petroleum wells at Renbangyoung, and other places might be mentioned, where evidence might possibly be obtained as to the asserted prophylactic effects of petroleum. A case has been made out for investigation. We should, however, have been glad to be informed of the races of which the petroleum working coolies are composed, and whether these are as susceptible to the action of malaria as Sepoys for example. It is said that these coolies are Dhanyars, who are believed to be as proof against the action of malaria as, according to Dr. White, the Cacharries are.

THE CATTLE PLAGUE IN AMERICA.

IF our readers have not already done so, we advise them to read the speech recently made by Lord R. Montagu, in which he detailed the facts connected with the nature, rise, and geographical progress of the cattle disease in America. In its highly contagious nature, the great rapidity of its spread, and speedily fatal character, we recognise the same characters that marked the rinderpest as we experienced it. The disease is said to be indigenous in Texas. It travelled in an incredibly short space of time to New York and Canada; and its progress was distinctly traced into Chicago, Illinois, Pittsburgh, Pennsylvania, and the State of New York, and from Illinois by the Great Western Railway to Buffalo in Canada, being apparently carried by some cattle which had pastured on land where some Texan cattle had grazed.

The measures adopted in America and Canada, with a view to the prevention of the spread of the disease by contagion, were of the most radical and rigorous description. What all the concurring conditions are which render a morbid virus so ready to extend over a vast area of country at one time as compared with another—what, in short, gives rise to the epidemic prevalence of a disease—it is not easy to determine; but contagion, using the term in its widest signification, appears to be an essential one. When we read of healthy cattle being attacked which had crossed or followed the track of diseased beasts, and of their conveying infection to other and distant localities, we are forcibly reminded of some of those occurrences which occasionally take place in India in regard to cholera. It has happened again and again that troops on the march have been stricken with that disease, which they have carried with them. Sometimes the mystery has been solved by the discovery of their having crossed a cholera track, or bivouacked on the site of an old camp. In the case of the Hurdwur pilgrims, men were attacked with cholera who had passed along the roads taken by the cholera-stricken pilgrims, without, however, ever having actually encountered them.

THE EPIDEMIC OF SCARLET FEVER AT GUILDFORD.

THE epidemic of scarlet fever at Guildford continues to progress, in spite of the favourable statements which have been published in *The Times*. More than two hundred fresh cases, with fifteen additional deaths, have occurred since the publication of our Report, and a deputation of medical men has now waited upon the local board, for the purpose of urging the adoption of more stringent measures for preventing the spread of the disease. The deputation consisted of Mr. Eager, Mr. Sells, Mr. Taylor, Mr. Butler, and Mr. Schollick. Mr. Eager urged the necessity of disinfecting the houses in which cases have occurred. He pointed out that the medical officer of health could not be expected to devote his time to this important matter, and that it was perfectly useless to send disinfectants to the poor, who did not know how to use them. He also urged the importance of better ventilation in the houses of the poor, and of segregation of the persons attacked. Mr. Taylor said that there should be a place to which fresh cases might be removed, and he expressed his conviction that poor persons would gladly send their children to it, although they would not send them to the workhouse. Mr. Schollick agreed with Mr. Eager that disinfectants in the homes of the poor, without a skilled person to apply them, were perfectly useless. It was impossible to isolate fresh cases. It was subsequently moved that a committee be appointed to find a suitable house to be used as a temporary fever hospital, and to report at the next meeting.

We are extremely unwilling to reopen the question as to the relation between scarlet fever and the unwholesomeness of Guildford. But it appears that the importance of "mere contagion" is greatly exaggerated, as compared with the general observance of hygienic rules. We cannot forget the instructive cases related by Dr. Druitt, as having occurred at Swanage, in Dorsetshire, where scarlet fever simultaneously affected thirteen members of the same family, on whose premises a foul cesspool (unemptied for many years) had burst. There was no other case for many miles round, until the infection was carried from this focus. There have also been a succession of epidemics of scarlatina in the Winchester Barracks, and it is remarkable that it has invariably commenced in the same block of buildings, immediately opposite an enormous cesspool, which almost continuously stinks.

The Mayor of Guildford observed that it was useless to disinfect a house whilst the fever was in it. But Mr. Eager wisely said, Go in at once; look to the sanitary conditions of the house, and carefully disinfect and ventilate. Remove the sick, and the probability is there will be no other case. A proper hygiene must inevitably lead to a discontinuance of the cesspool system, which we still believe to be at the bottom of the evil. Again we would urge a trial of earth conservancy, to be carried out under the authority of the local board.

DIETARY SCALES FOR MERCHANT SHIPS.

THE subject of dietary scales for the use of merchant ships has occupied the attention of the Board of Trade for some time, and, at the commencement of the current year, Dr. Dickson, R.N., and Mr. Harry Leach, the medical advisers of the Board, were requested to draw up a scale of provisions suitable for the crews of foreign-going vessels. This scale, which was submitted to their lordships in February last, was forwarded to all the local Marine Boards in the United Kingdom, with a circular letter desiring comments thereon. Replies from all these Boards have now been received, and form the material of a Parliamentary paper which has just appeared. Before discussing the many and varied opinions recorded by the local authorities, we may observe briefly that the scale upon which they are founded is good and liberal, is framed with a due regard to economy, and appears in most respects sufficient to maintain health at sea. Its perusal by landsmen would probably induce remarks to the effect that it is somewhat deficient in variety of diet, but a glance at the replies forwarded by the Local Marine Boards shows at once that it is, generally speaking, considered by shipowners and those connected with the mercantile marine unnecessarily liberal, and too costly. The chief alterations made (as compared with the scales of rations now in common use) are the addition of preserved meats and vegetables, a small daily allowance of rum, beer, or wine, and an increased quantity of tea, and also of water for drinking and washing purposes. The quantity of vinegar is decreased, and some other minor changes are made tending to counterbalance financially the additions above-mentioned. In glancing over the report, we observe that the local boards at Belfast, Cork, London, Aberdeen, South Shields, Dublin and Dundee, are favourable to the scale, but almost

universally object to the addition of any ration of alcoholic drinks, and to the increased quantity of water recommended. The other Boards either deprecate interference altogether, affirm that the scales at present used are all-sufficient, or recommend the Government to await the result of the working of the Merchant Shipping Amendment Act, passed last year. The chief objections raised to the scale, however, open up two important points, having direct reference to health and hygiene on board ship. Are alcoholic drinks useful or necessary for sailors, and is a daily allowance of a gallon of water sufficient for drinking, cooking, and washing purposes? In considering the former query, it must be recollected that seamen exist under entirely different circumstances as compared with landsmen, both as to kind and quantity of food, work, and sleep, and that, with reference to the latter query, their nominal condition as to accommodation cannot be compared with that which usually obtains on shore. It is not, however, to be inferred that seamen are, as a rule, badly fed and badly housed; but it is specially necessary that the reverse should always be the case, because for obvious reasons healthy men cannot be substituted for the sick, and because sickness among a ship's crew indicates danger to the vessel, and to the whole of her living freight. We shall recur to this subject at some future period, when the Merchant Shipping Acts are discussed in Parliament, but the above queries afford great scope for attentive consideration to all who are competent to deal with so important a subject.

POISONOUS SOCKS.

ON Tuesday, a Mr. Webber brought under the notice of the sitting alderman at Guildhall the fact that the dye used in some of the gorgeous socks and other underclothing displayed in the windows of some of the metropolitan hosiers exercises a very deleterious influence upon the skins of the wearers; producing irritation and an eruption, and leading, if persisted in, to actual sores. This statement, though sufficiently startling, is not absolutely novel. Last year, during the time of the performance of the "Doge of Venice" at Drury-lane Theatre, one of the *danseuses* applied to one of the metropolitan hospitals with an anomalous eruption affecting one foot and exactly those parts which are covered by an ordinary dancing shoe. It was immediately perceived that the heat of the foot, where covered by the shoe, acted upon the dye of the stocking —which the patient stated was of a brilliant red colour,—and thus affected the skin; but the absolute immunity of the opposite foot was not readily intelligible, until the fact was arrived at that the exigencies of the ballet necessitated another colour on the other limb. In this instance it appeared that other performers who wore white hose beneath their coloured garments escaped all injury; and the patient's skin recovered its normal condition shortly after adopting this plan. We are glad to find, from Mr. Webber's statement, that the manufacturers of these dangerous articles are taking every step to abate the evil they might give rise to, by withdrawing them from the market; and we hope, therefore, that the profession will have but few opportunities of studying the eruption which follows their use.

THE COOKING AT CHARING-CROSS HOSPITAL.

THE authorities of Charing-cross Hospital have recently introduced Captain Warren's system of cooking into their institution; and as far as their experience of its utility at present enables them to speak, have observed a decidedly satisfactory result as regards the comfort of the patients, and saving (quite three-fourths) in respect of the amount of fuel consumed and of waste in the cooking in connexion with the new as compared with the old grate system. The proportion of "waste" is found to be one-third now, as compared with one-half formerly. A very compact and ingenious contrivance for carrying the dinners from the kitchen to the wards has been devised by the senior surgeon, Mr. Hancock, and is worthy the attention of the authorities of other public institutions. It consists of a square box made of tin, eighteen inches in height by about eight and a half in breadth, and the same in length, with double walls, enclosing a space of about half an inch in width, intended to be filled with steam. There are two openings shut off by stopcocks above and below. The box itself fits on to the kitchener, and can then be filled with steam, by connecting its inferior opening with a pipe at the top of the boiler made for the purpose. The interior of the box is fitted with twelve trays, divided each into four compartments, and therefore capable of holding the dinners of forty-eight patients. In using the boxes, they are connected with the boiler of Captain Warren's kitchener, the steam is allowed to pass into the chambers, and the rations are placed in the tins; the stopcocks are then shut, the boxes removed from the kitchener, and two of them are carried by a yoke to the wards, where the food arrives at a proper temperature. The box filled with forty-eight "portions" weighs forty-eight pounds. The nurses remark that the adoption of this plan has one great advantage, that all the patients get their dinners at the same moment, a circumstance that implies the saving of a good deal of time and inconvenience.

THE CASE OF DR. STIRLING, R.N.

THE *United Service Gazette*, in its first leading article last week, recapitulates the conduct of Commodore Randolph to Dr. Stirling, and comments upon it as follows:—

"This is the whole case, stated without the slightest wish to prejudice opinion. The whole junior and civil branch of the service has been looking on with much the same feeling as ourselves; not hoping much, for the opinion entertained by the service of the obstinate, stolid immobility of the Board, and its inveterate opposition to justice, is identical with that expressed by ourselves; but with curiosity—thinking that it was not improbable that the present precarious position of the Board, resulting from the unsavoury revelation produced by the late inquiries, might somewhat modify its counsels. They are therefore no more surprised than ourselves that the old traditions of the Admiralty have been fully maintained, and that the Board has supported their brother officer both in his insolence and in his usurpation. No redress whatever has been granted to Dr. Stirling, and he still remains deprived of his appointment by an officer who had no authority whatever for so doing."

The *Gazette* goes on to state that it is informed that Commodore Randolph is in the habit of rehearsing the scene between himself and the Doctor for the amusement of his friends after dinner, and regards the whole affair as an excellent joke! This is the way in which the Admiralty allows surgeons to be encouraged to enter the service.

THE VACCINATION ACT IN ST. PANCRAS.

THE mortality from small-pox in St. Pancras was higher during 1867 than in any year since 1863, and with that exception the deaths were more numerous than they have been for the last twelve years. "This is not a satisfactory state of things," says Dr. Hillier in his annual report, "and I am quite convinced that if vaccination of the best sort were carried out throughout the whole parish in as complete a manner as is provided for by Acts of Parliament, such a death-rate from small-pox would be impossible." The return of vaccination supplied by the clerk to the guardians to Dr. Hillier for the year ending Michaelmas, 1867, shows that out of 7552 registered births only 2561 children were successfully vaccinated under the age of one year by the public vaccinators. After allowing for those vaccinated at the two Government vaccine stations in St. Pancras, also for those vaccinated by private practitioners, and likewise for children dying under the age of three months, or whose health unfits them for the operation, Dr. Hillier has no doubt that the vaccination of a large number of children is

delayed much too long, or altogether neglected. We are glad to see such a hopeful view of the results of recent legislation as is expressed in the following sentence:—"If the guardians carry out the provisions of the Vaccination Acts as efficiently as they have been carrying out the provisions of the Metropolitan Poor Law Act, there is no doubt that such a mortality from small-pox as was recorded in the death-registers of 1863 and 1867 will not continue to be met with."

LUNATICS AT DERBY.

AT a recent meeting of the Derby Town Council, in the discussion upon the proposed borough lunatic asylum, Mr. Councillor Pool made the following sapient and liberal remarks:—

"Mr. Pool asked how it was there were more lunatics now than formerly. He was strongly inclined to think it was owing to the good treatment they received. It was his opinion that the best plan of treatment would be to treat them with a horsewhip! He was not speaking ironically at all, but meant what he said: a good horsewhip would be the best thing. Under the present system of treatment they were always likely to have a good many lunatics."

We are afraid Mr. Pool's parents and guardians must have been of that infatuated class who "spare the rod and spoil the child," since this is the only supposition by which we can explain there being more lunatics than formerly in Derby, seeing that Mr. Pool is convinced that good treatment leads to lunacy, whilst the vigorous application of a whip tends to restore the scattered senses. Will no muscular Christian take pity on the poor Town Councillor, and endeavour to enlighten him by his own method?

ACORNS.

A LETTER appeared lately in *The Times* as to the possibility of utilising the crop of acorns, which happens to be exceptionally large this season; and, in answer, some correspondents pointed out the medicinal virtues of acorns, and the power they exercised over diarrhœal disorders in men and animals. We must always make a few deductions from the encomiums passed on new remedies, particularly the encomiums of non-professionals. Any astringent properties which acorn meal possesses are to be attributed to the presence of vegetable acids, such as tannic and gallic acids—remedies as old as the hills for diarrhœa and dysentery. Pigs will eat acorns, as everybody knows; but if some easy process could be devised by which the bitter principle could be extracted from horse-chesnuts and acorns, and these natural products made palatable and available for the food of man or beast, the man who made the discovery would be rendering a very great service. The idea has naturally often been suggested, but never acted upon. Why the name of horse-chesnuts should have been given to an object which the horse abominates as a food we do not know.

THE MEDICAL OFFICER OF THE UCKFIELD UNION.

ON Monday, September 28th, the guardians of the Uckfield Union, Sussex, concluded a most patient and lengthened inquiry into an allegation against one of their medical officers, Mr. M. Mackintosh, of negligence and improper treatment of a pauper patient. It is pleasing to learn that the result of the investigation was the entire exoneration of Mr. Mackintosh, who was proved not only to have attentively and properly treated the case, but to have shown extra consideration for the patient, in continuing to inquire after her, and allowing her wine and nourishment, even when the attendance of another practitioner had been imported into the case by some kind-hearted though officious and misguided neighbours, who probably thought, as is often the case, that they could not better show their own goodness than by seeking for the shortcomings of others. On the part of the board, after the evidence of the patient herself, and others who were brought in support of the charge, and without calling for any defence, the proceedings were characterised as altogether unnecessary, and the individual who instituted them was requested both by the chairman and vice-chairman to be cautious as to occupying the time and attention of a body of gentlemen by bringing charges against their officers so entirely unsupported by evidence as this, and he was invited, for the future, not to interfere with the pauper patients. The manifest feeling of the board was that of entire confidence in their medical officer.

THE INDIAN MEDICAL OFFICERS AND ABYSSINIA.

ALTHOUGH *The Times* has on more than one occasion strongly advocated the claims of several military officers for honours in addition to those already gazetted, we believe that, with the exception of the *Army and Navy Gazette* and ourselves, no paper has thought it worth while to advocate the claims of the Indian medical officers to a share in these honours and distinctions. The proportion of these officers was far greater than that of the Royal medical service in Abyssinia, and six of the latter have been promoted. The names of several men have been mentioned as having done good service during the campaign, and we think they are fairly entitled to reward or notice of some kind.

THE SERPENTINE.

DR. ALDIS has reported to the Nuisances Removal Committee of St. George's, Hanover-square, upon the impure state of the Serpentine, and has also brought the same under the notice of the First Commissioner of Works, who has replied—"That the present condition of the Serpentine, and the best means of making and keeping it pure and safe, are now under consideration, but that it is not intended to undertake any operations of magnitude until Parliament shall have voted the necessary supplies." The public health and safety alike demand that the Serpentine be dealt with similarly to the water in St. James's Park, and we trust Lord John Manners will obtain the requisite parliamentary grant as early as possible next session.

ROYAL FREE HOSPITAL.

ON Tuesday, Sept. 22nd, Mr. John D. Hill ligatured the popliteal artery in a female patient, who was the subject of a large bleeding cancer of the leg. Mr. Hill thought that by suddenly diminishing the supply of blood to the growth the disease might be arrested. The effect of the operation hitherto has been most satisfactory, the growth having undergone some interesting changes, which may be thus briefly stated. First, the bright vascular surface gradually assumed a congested venous character, and ultimately became black and gangrenous, the dead surface tissue being thrown off. In the next place, the subjacent layer of vascular prominences became bloodless, and is being cast off in white fibrinoid patches, varying in size from a pin's head to a large-sized shot; and, lastly, the stroma is shriveling. On the seventh day after the operation the cancerous growth was not more than one-third its original size, and it continues to decrease daily.

ON the authority of the *Army and Navy Gazette*, it is announced that directions have been given by the Admiralty to build extra cabins on the main deck of H.M.S. *St. George*. Our medical brethren will hardly believe that this extra accommodation, by which light and air may be obtained, is to be granted to "pupil teachers" selected from the Royal Naval School, Greenwich, instead of to either of the medical officers. Let young members of the profession ponder this, and hesitate before they commence a career in the public service where such arrangements are sanctioned.

WE are glad to learn from a statement of the First Commissioner of Her Majesty's Works that the surplus bedding-out plants of our parks and public gardens are to be distributed this autumn among the poor of London. Flowers in a room and at the windows are among the most cheerful and civilising objects that the poor can possess. To many a needy woman and sick child doomed to occupy month after month a small room in a dull street a few flowers may be the only glimpse they will get of that nature which appears so prodigal of freshness and beauty to more favoured individuals, who can take an annual tour. There is more than matter-of-fact and cynical people guess in the presence of those trifling objects which tend to make the rooms of the poorer classes homelike and bright, particularly where women and children are the inmates.

THERE were registered in London last week 101 deaths from scarlatina, and the Registrar-General fears that the cause of the greatly increased mortality from this disease is to be found in the bad sanitary state of the poorer districts. An instance in illustration of this is given with reference to a fatal case of scarlatina maligna occurring in a house where there is "no water laid on to the watercloset, and the effluvium is very offensive."

ACCORDING to the *Liberté* it would appear that the condition of the unfortunate Empress Charlotte is becoming worse, and that her mental and physical state has given rise to increased apprehensions. The unhappy Empress is suffering from a relapse, and her mind is possessed by an insane fear of being poisoned.

AT the last meeting of the Board of Managers of the Metropolitan District Asylums, the recommendation of the Finance Committee, that a rate of one-eighth of a penny in the pound (to be payable on the 25th December next) should be levied throughout the several unions and parishes, was adopted. The chairman of the Board (Dr. Brewer) will lay the foundation stone of the new Leavesden Asylum.

IT is gratifying to perceive in the Army Medico-Chirurgical Society of Portsmouth the signs of vigorous life. The next meeting will take place on the 7th inst., when several papers of professional and scientific interest will be read. Such societies afford medical officers an opportunity for interchange of thought and information which cannot fail to do good.

MR. ALFRED HAVILAND'S paper "On the Geographical Distribution of Heart Disease in England and Wales, and its relation to sea-air and tidal influence," will be read at Birmingham on Tuesday next, at the Congress of the National Association for the promotion of Social Science.

THE excessive mortality from summer diarrhœa (chiefly among infants) which recently prevailed in the eleven large English towns has nearly disappeared. The deaths from this cause, which exceeded 900 per week at the end of July and beginning of August, declined last week to 228. More than 6000 deaths have resulted from diarrhœa in these towns during the last ten weeks.

THE local authorities of the village of Colebrook (Devon) have adopted plans for a system of drainage, but we regret to observe that (according to the report in the *Western Morning News*) the sewage is to be "carried into the river near the railway station." The sewage should be used to fertilise the land, not to pollute the river.

WE regret to announce the death, suddenly, on Sunday morning, of a well-known member of our profession, George Bottomley, F.R.C.S., of Croydon, in his 81st year.

THE deaths from zymotic disease in Plymouth during the three months ending August 31st more than double the number which occurred during the corresponding period of last year. Infantile diarrhœa was the cause of this increase, and it is noted that 53 out of 58 deaths from this disease occurred in families who occupied rooms at weekly rentals.

IT is, we learn, in contemplation to establish a cottage hospital at Bishop Auckland.

THE Newton Abbott Board of Guardians will shortly consider the advisability of appointing a public officer to carry out the requirements of the Vaccination Act.

A NEW district hospital for the insane in the county Down is approaching completion, and will be ready for the reception of patients early in the ensuing year.

Correspondence.

"Audi alteram partem."

THE RESULTS OF SOME MEDICAL OBSERVATIONS OF ANIMALS.

To the Editor of THE LANCET.

SIR,—You have been giving your readers a review of Darwin lately. Some facts have recently come within my personal knowledge which, though not of a strictly medical nature, will, I think, prove alike interesting to the physiologist and natural historian.

The first illustrates that law by which an increase of growth and development follow on an increased use of any part of the body, and shows the readiness with which nature responds to the calls made upon her.

Two love-birds—a species of paroquet—were placed in a cage together. One of these birds was one day found to have sustained an injury of its feet and legs, so that it was unable to roost, and had to remain on the floor of the cage. By degrees it appeared to have recovered to some extent the use of the left leg, but that of the right has never been restored, all prehensile power in the right foot having been lost. The bird had to depend upon one leg and the beak for all its movements. It moved about, fed itself, and roosted with the aid of these, and it used to hook the upper mandible of the beak around the wires of the cage in climbing and during sleep. The upper beak began to grow rather rapidly, and to such an extent has this taken place that in about a year and a half, the time since which it was apparently injured, this part has grown to the length of about two inches, and has a curve somewhat resembling that of a ram's horn.

The next, I imagine, illustrates the well-known physiological law that irritation of a nerve produces painful sensations at the periphery of the nerve irritated. A jackdaw was stamped upon by a horse in a stable, and its right leg was broken immediately above the foot. Attempts were made to set jack's leg; but the bird was observed to be constantly pecking at its toes, and to such a degree as to have pecked its foot away, so that it now stands upon the stump which has resulted from this kind of molecular amputation performed by itself. Nothing can be more droll than the appearance of this jackdaw—a bird with a good deal of the mock gravity of its kind—when he forgets himself and scratches his head with the foot of the sound limb. In attempting to preserve its centre of gravity the bird brings its stump well to the middle of its body before raising the opposite foot, which is no sooner done however than the jackdaw loses his equilibrium and falls. He quickly gets up again with a grave air of consciousness of wounded dignity. It can manage, however, to indulge with safety in the luxury of scratching its head with the stump.

The next affords a curious illustration of maternal instinct in a white mouse. An officer's children had some of these animals. One was expecting an addition to her family, and she was placed in a cage, with a wheel at one end, and a compartment supplied with materials for a nest at the other. In the lid of the latter was a small hole covered with wire,

through which the mouse could be observed. She first of all, for some unknown reason, chiseled a round hole out of the bottom of the box. A newspaper was placed underneath. She had a brood of seven little ones, and with the first bread and water supplied her she pasted up the little wire window; but apparently she had not screened her young from curious eyes sufficiently to her satisfaction by this means, for she cut out with her teeth a circular piece of paper from the newspaper placed beneath the hole in the floor of the cage, and with this she effectually shut herself out from view by attaching it to the wired window. When people went near her young she tried to bite; but as soon as they would go into the wheel their education was, we may suppose, considered complete, for she ceased to take any notice of persons looking at or caressing her offspring.

The writer had a terrier pup, which had the misfortune to be run over by a cart, by which its leg was broken. The injured limb was put up in splints, and apparently to the comfort of the dog, for he made no attempt to remove them. Fractures heal very readily and quickly in the lower animals, and after a short time the dog was observed to put the wounded leg to the ground and use it. Satisfied with the experiment, it set to work and in a few minutes tore off the splints and strapping, although these had been applied with care to prevent their removal by the animal. The first time this dog was taken out it met a cart coming up a narrow lane. The dog looked about him in evident terror. Afraid to run, and not knowing where to run to escape its old enemy, it sat itself up against a wall and howled.

I am, Sir, yours obediently,
JEFFERY A. MARSTON.

EPIDEMIC OF FEVER IN THE VICINITY OF LIVERPOOL.

To the Editor of THE LANCET.

SIR,—I have been very much interested by the remarks of your Liverpool correspondent regarding the epidemic of fever in the vicinity of that town.

Seeing that in this epidemic certain cases present the unusual complication of diphtheritic exudation on the tongue and fauces when convalescence is apparently established, that then the patient is "again in a critical state for some days," just as in the epidemic recorded by me (*vide* THE LANCET, Feb. 17th, 1866), and to which your correspondent refers, it would be exceedingly interesting to determine whether this outbreak can reasonably be ascribed to such causes as I enumerated in my account. The poison your correspondent believes to be *sui generis*; hence much greater interest attaches to the investigation. I may remind your correspondent that in one of my cases violent epileptiform seizures occurred with the throat complication, and that the same peculiarity was witnessed and described by Dr. Playne, of Maidenhead (*vide* THE LANCET, March 7th, 1866), in a case of his, which he had good reason to believe was contracted in Oban. Was there any such complication in the present epidemic?

I shall look forward with much interest to the "future letter" of your correspondent, and trust that further investigation may elucidate more clearly the relationship between water contamination, defective drainage, and this peculiar form, as I may venture to term it, of enteric fever.

I am, Sir, your obedient servant,
Glasgow, Sept. 1868. D. CAMPBELL BLACK, M.D.

APHASIA.

To the Editor of THE LANCET.

SIR,—Your remarks on "Aphasia" interested me much, more especially so through having at this time two patients suffering from this indication of cerebral mischief. Singularly enough, my patients thus suffering are mother and daughter, the latter of whom was seized with an apoplectiform attack some weeks since, resulting in partial paralysis of the *right* side, aphasia, &c. The mother, through anxiety, protracted watching, and loss of rest, had an epileptiform convulsion, with subsequent great prostration and aphasia. Should any of your subscribers who take a special interest in this subject wish to see these cases, now under my care, I shall feel pleasure in submitting them to their notice; and, if my professional engagements permit, I will carefully report these cases at length (without logomachy, however), if you have space for me so to do.

I am, Sir, your obedient servant,
Cley-next-the-Sea, Sept. 27, 1868. W. SUMPTER, M.D.

REDUCTION OF VACCINATORS.

To the Editor of THE LANCET.

SIR,—In your last number, in reference to the changes taking place as regards vaccination in Islington, you express a belief that the Poor-law Board would not sanction the dismissal of their old officers. Judging from what has been done elsewhere, you indulge in a vain hope. The parish of St. Luke, E.C., was formerly divided, for the purposes of vaccination, into four districts. Lately it has been altered into one, and the guardians, dismissing their old vaccinators (two of whom have been in the service of the Poor-law Board for twenty years), have appointed a person who in the year 1863 was in business as a chemist and druggist, and who still continues to combine the vending of drugs with his other duties. Let me add that the Poor-law Board have approved of this act,—a specimen of the care they bestow on their old officers.

I am, Sir, your obedient servant,
Sept. 1868. MEDICUS.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

THE epidemic of fever which has appeared in the neighbourhood of Liverpool, at Bootle, Seaforth, and Waterloo, still continues. As there have been various notices about it during the last few days in the local papers and elsewhere, many of which are very incorrect in several particulars, it is as well to repeat here that further inquiries substantiate the correctness of the account in last Saturday's LANCET both as to the number of fatal cases and the localities affected. There have been four deaths since that account was sent, making in all sixteen deaths from the fever. The majority of deaths have been in young people, and chiefly young girls from 13 to 15 years of age.

Of course in such an epidemic as this, the first question that arises alike in the mind of the public and in that of the friends of those attacked is—What is the cause? and it is humiliating to be compelled still to fall back upon vague surmises and offer them as possible explanations, all the while feeling we have no certain facts to go upon. In the present instance, various have been the causes assigned, the most frequent being that of defective drainage. That the whole neighbourhood is badly drained and that it abounds in ditches and stagnant pools, is undeniable. The ditches, dry all the summer, have been—since the rain set in six weeks ago—half full of water, which, from the level nature of the ground, does not run off.

It has also been stated that the traps in connexion with the sewers along the road sides are without water owing to the long drought, and the poisonous gases can thus escape and impregnate the air. In Liverpool they are periodically examined, cleansed, and flushed, but such is not the custom of the authorities of the infected district.

There are two main sewers—the one at Rimrose, the other at Waterloo—which empty themselves in the sea at the Mersey; neither of these go below water mark, and there are about four hours every tide, eight hours in the twenty-four, when the mouths of these are uncovered, and a most offensive smell is perceived if the wind happens to be towards the land.

The Liverpool and Leeds canal meanders through all this district, though it is anything but "a gently meandering stream" in the poet's sense, being a dark, polluted, almost stagnant stream. Here and there along its banks, flats laden with the midden refuse of Liverpool discharge their contents for removal afterwards by farmers for manuring the land. A week or ten days ago great quantities of small fish were found floating dead on the surface of the water. It was at first supposed that they had been intentionally poisoned by cocculus indicus, but it is more probable that they too have imbibed the typhus poison, and died in the same way as the perch described in the last number of THE LANCET as dying in great numbers in the Lake of Geneva of typhus.

Another possible contaminating source is to be found in the heaps of mussels on the shore at Bootle, in a high state of decomposition, impregnating the air all around to such an extent that it is scarcely possible to approach very near them.

There is a large gipsy encampment on the shore at Seaforth; amongst them the fever has prevailed, and two deaths have occurred.

Finally, to allude to water contamination. That it conveys the poison in the present outbreak is extremely probable from the course the fever is now taking in its extension. Instead of coming into Liverpool by the main thoroughfare and crowded streets which extend from the north end of the town to Bootle, it has extended eastward and inland through a scantily-populated district, and appeared in West Derby-road and Everton, not far from one of the large reservoirs. All the pipes from this are in connexion with those at Bootle, Ford, and Seaforth.

The type of fever here is again exactly similar to that of the places above mentioned, and it has been equally sudden and violent in its outbreak.

Liverpool, Sept. 29th, 1868.

NEWCASTLE-ON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

THE banks of the Tyne and their neighbourhood are famous for their great explosions. There was the memorable explosion of 1854, occurring coincidently with the great fire at Gateshead and Newcastle, by which about fifty persons lost their lives, and between two and three hundred were more or less injured. Only a few months ago I wrote to you about the terrible explosion of nitro-glycerine on our town moor, by which we lost our sheriff, and town surveyor, along with several inhabitants. The manufacturing village of Washington, a few miles from here, last week was the scene of a lamentable accident from an explosion of mineral oil called "diamond oil," one of the paraffin series of products. Although Washington is a village mostly engaged in the chemical trade, the explosion had nothing whatever to do with the works; it might, in fact, have occurred anywhere. It appears that the wife of a grocer at the place ordered two gallons of this "diamond oil" from a traveller from Newcastle, on Monday. The oil was delivered on Wednesday in an earthenware vessel, which was temporarily placed in the kitchen at the back of the shop. No person in the house appears to have been aware of its dangerous character. In fact it was placed under the kitchen table, and just as the family, consisting of seven persons, were about to partake of their dinner, one of the persons accidentally hit the jar with his foot. It fell on the ground and broke; a portion of its contents ran towards the fireplace, and there it got ignited. A slight explosion occurred, and the whole place, including its unhappy inmates, were instantaneously enveloped in a red mass of violent flames. They appear to have got hold of each other, and huddled themselves together in a corner. Some of them soon rushed out screaming, in flames from head to foot. The Rector of Washington, who happened to be in the street at the time, displayed very great presence of mind. At the inquest on the victims he said:—"I saw a girl run with her clothes on fire. I ran towards her as fast as I could. I had a loose coat on, and as I ran I took the coat off. I put it round the girl, and threw her on the road. Whilst that was being done another girl ran towards me, and then a third—all with their clothes on fire. I had another coat on, which was taken off, and I believe it was put round the second; but there was a difficulty with the third. Some seconds elapsed before I could throw her on the ground. I had nothing to put round her." Five persons have been killed by this accident, and four persons so dangerously injured that they are hardly expected to recover. Some interesting evidence was elicited at the inquest as to the nature of this dangerous material by Dr. Jones, Mr. Bell, and others. A drop or two placed in a tube instantly, and without any application of heat, gave off a highly inflammable vapour. Poured into a dish, the oil itself only indicating a temperature of 59°, a lighted match communicated flame when held at the distance of one inch and a half from the liquid. A quantity thrown upon very moist earth, after being absorbed, took fire instantly on being touched with a lighted match, and burned with a large flame in spite of a violent wind. There can be no doubt that the so-called "diamond oil" is highly dangerous, and should be kept in suitable strong vessels.

In the present case, not only was the jar in which it was delivered of earthenware, but its sides were so thin as to break when merely overturned. Mr. Bell said: "From the evidence it would appear that this jar, containing nearly two gallons of oil, had been for some time in a small kitchen, in which all the cooking operations for nine persons were carried on. An examination of the premises would induce me to suppose that in all probability the atmosphere of this small room would not be under 80°. In my opinion, after the oil had flowed over the floor, no doubt highly heated next to the fireplace, vapours would be given off so rapidly as to inflame before it reached the fire. In a second the increase of temperature by the burning oil would increase the evolution of vapour, and speedily fill the entire chamber with flame. This impression is confirmed by observing that, instead of the woodwork and furniture being most burnt where it was next to the inflamed oil, the wooden ceiling, and sides of the room, were as deeply charred as those portions next to the original source of combustion. The intense heat which would fill every portion of the room, and the rapid combustion of air needful to sustain life, render it almost a miracle how anyone escaped with life from such a conflagration."

Dr. Jones deposed to the injuries and appearances of the bodies, which were very similar to those sustained at Abergele: they were blackened and impregnated with carbon, the sex being hardly distinguishable.

The jury gave in the following verdict: "We are of opinion that Mary and John Stokoe, and two others, came to their deaths by the upsetting and breaking of a bottle containing two gallons of diamond oil, the same igniting at the fire. Also, that the patentees, Binning and Son, and the agent, Robert Logan, were highly negligent in not having given proper directions to the purchasers of the dangerous nature of the oil, and we consider the handbill issued by the manufacturers is calculated to mislead the public. We consider the oil, from its highly inflammable character, to be unfit for domestic use. We beg to call the attention of the police and county magistrates to the illegality of moving such dangerous compounds. We beg to thank Mr. Bell for the information on the subject kindly volunteered by him."

Newcastle-on-Tyne, Sept. 26th, 1868.

IMPORTANT PROSECUTION UNDER THE VACCINATION ACT.

AN important case of personal interest to the public vaccinators in the kingdom came before the magistrates at the Hampton Petty Sessions on the 1st of September. It opened up the peculiar question whether those vaccinators who hold vaccination contracts with Boards of Guardians under the old, are liable to the penalties under the New Vaccination Act, for neglecting to transmit certificates of successful vaccination to the registrar within the twenty-one days of the operation. The magistrates decided in the affirmative. The subject is one, therefore, that assumes considerable importance. The points of the case are as follows:—

Dr. Clement, of Teddington, was summoned for neglecting to return a certificate of the successful vaccination of Elizabeth, the child of Edward Sears, of Teddington, within 21 days of vaccination.

Mr. Bussell, instructed by the Board of Guardians, appeared to prosecute.

Henry Fry said: I am registering officer for this district. On the 13th February a child of Edward Sears was registered as having been born on the 10th January, 1868, and notice of vaccination was given by me to the father on the 13th February. On Sunday, 30th August, I received the certificate of successful vaccination now produced, signed by Dr. Clement, who calls himself in that certificate "public vaccinator."

Cross-examined by Dr. Clement: I am the registrar of births, deaths, marriages, and vaccinations. I discovered by my own books that the children Rivers, Hazell, Sears, and Reed were unvaccinated, and I reported the same to the Guardians. I make up my returns on the 1st July and 1st January every year. I did not receive a certificate of vaccination of Edward Sears's child until after the 1st July.

Mr. Bussell said that as Dr. Clement had vaccinated the child on the 27th July, he was bound, under the 21st section of the new Vaccination Act, to send in a certificate of vaccination within 21 days to the registrar. The certificate had not been sent in till the 30th August, and Dr. Clement had therefore made himself liable, under section 30 of the Act, to a fine of 20s.

Dr. Clement, in defence, denied, first of all, that the Guardians had any right to bring him to that Bench. He wanted to know under what Act he was summoned there. (Mr. Bussell: Under the Vaccination Act of 1867.) It was perfectly clear from the Act itself, and from Mr. Fry's evidence, that the prosecutions were to be half-yearly. The name of Sears did not appear in the list sent in by Mr. Fry on July 1st, as the child had been vaccinated since that date. He was under a contract with the Board of Guardians under the old Act, but not under the new. The old Act said nothing about his sending in a certificate of vaccination within 21 days. He had contracted to do nothing of the kind, and the new Act of Parliament could not be tacked on to his contract. He had not signed any new contract, and was therefore not bound by any but his old one. Dr. Clement then read a letter from the Board of Guardians, dated March 3, 1868, stating that it would be necessary for him to enter into a fresh contract with them. He thought the Board of Guardians had neglected their duty in not getting that contract completed.

The Bench, after a long consultation, fined Dr. Clement 20s., including costs, at the same time expressing their opinion that it would been much better if an amicable arrangement could have been come to.

Dr. Clement asked for a case for the Court of Queen's Bench, but mentioned no point of law on which he desired one to be granted.

The Bench decided that there was no appeal.

Dr. Clement has determined to carry the matter into the Court of Queen's Bench, and gives the following reasons for the illegality of the prosecution and conviction:—

"The third section of the new Vaccination Act of 1867 requires the appointment of a public vaccinator, and imposes upon the guardians as a public duty for carrying out the provisions of the statute, that they 'shall enter into a contract with some duly registered medical practitioner, for the performance of vaccination of all persons resident within each district, and every such medical practitioner shall be termed the public vaccinator of the district.'

"It is clear, therefore, from this section, that the only person who is to be called a public vaccinator is the medical practitioner who has signed a contract, for by his contract only is he distinguished from a private vaccinator.

"Section 7 of the same statute declares that the guardians shall make stipulations and conditions in their contracts to secure the due vaccination of persons, the observance of the provisions of this Act with regard to the transmission of the certificate of successful vaccinations, and the fulfilment of all other provisions of this Act on the part of the public vaccinator.

"This plain and indisputable duty imposed upon the guardians by the statute the guardians have failed to fulfil; and I shall leave it to the public and the Court of Queen's Bench to determine whether the men who had so signally failed in carrying out the clear and distinct provisions of an important statute, were in a position to prosecute.

"I have not entered into any contract with the Board of Guardians under the new statute, either with or without the stipulations and conditions above referred to, and I believe no such contract has been signed by any of the reputed public vaccinators throughout the entire district of Kingston union.

"A properly signed contract with a duly registered medical practitioner, for the due performance of vaccination, is the foundation stone of the new statute, which is so constructed that failure on the part of the guardians to fulfil this important obligation renders all the remaining sections of the Act worthless.

"In addition to the one all-important stipulation respecting 'the transmission of the certificate of successful vaccination by the public vaccinator to the registrar, within twenty-one days,' the contract must also contain stipulations as to the place and hour at which the public vaccinator will attend. It must contain stipulations for the payment of the public vaccinator by the increased scale of fees allowable under the new statute; it must contain a condition and restriction confining him to his own district, and a further restriction from receiving money from any parent for vaccination done under his contract, and in all which respects he differs from a private medical practitioner who is under no contract. The want of such a contract as this between the guardians and the reputed public vaccinators, is my defence to the prosecution, and the ground of my appeal against the conviction.

"I was summoned to the Bench upon an alleged failure of duty under the Vaccination Act of 1867, in not transmitting certificates of the successful vaccination of five children within twenty-one days after the performance of the operation. I contended at the Bench that I was under no contract to fulfil any such obligation as the transmission of the certificate within twenty-one days, that the prosecution was illegal, and that a conviction would be contrary to law."

Medical News.

APOTHECARIES' HALL. — The following gentlemen passed their examination in the Science and Practice of Medicine, and received certificates to practise, on Sept. 24th:—

Afflick, James, Stretford, Lancashire.
Duke, Benjamin, Guy's Hospital.
Nunn, George Richard, Lyndhurst.
Peacock, Stanley, Frederick-street, King's-cross.
Pottle, Edgar George, Bath-street, City-road.
Rix, Charles James, Oxford-street, Manchester.
Thompson, James Ashburton, Delamere-street, W.

The following gentleman also on the same day passed his first examination:—

Patchett, Wm. Ashton, Manchester Infirmary.

At the Preliminary Examination in Arts, held Sept. 25th and 26th, 129 candidates presented themselves, of whom 36 were rejected, and the following 93 passed, and received certificates of proficiency in General Education:—

J. S. Andrews, H. M. Aspinall, C. E. Baker, F. Burnes, J. Barrett, C. A. G. Barrow, Frederick Barrow, W. H. Bassano, E. A. Birch, W. D. Bowkett, E. J. Burgess, H. F. Burnes, J. K. Burt, H. Charlesworth, W. H. Coke, C. A. Colmer, G. B. Collet, N. E. Collier, J. B. Colthurst, J. B. Connell, F. A. Crisp, E. O. Day, C. J. Davey, J. T. Duncan, Henry Davis, Henry Evans, W. Fairbank, S. H. Fisher, W. Flewitt, E. Fyson, J. A. Goodchild (special certificate), H. J. F. Groves, F. A. Hall, G. A. Hamerton, A. Hands, Arthur Hanks, Vincent Harris (special certificate), W. D. Haslam, W. D. Hemming, H. Hethey, A. H. O. Hernage, J. C. Irving, W. E. Jay, C. G. Johnson, Chas. A. Jones, Thomas Jones (of New Quay), A. Kebbell, H. C. Lang, J. Lidderdale, J. C. W. Lord, E. T. Luke, H. M. Maggs, A. V. Maybury, Arthur Moore, S. W. Moore, C. F. F. Murrell, V. T. Nicoll, F. H. Nisbett, E. J. Nix, F. C. Openshaw, W. Pescey, R. J. Pitt, J. P. Pocklington, A. C. Pratt, C. E. Priestley, D. W. G. Prothero, T. D. Ransford, Mark Rollinson, Stanley Robinson, H. Rogers, A. H. Savory, F. J. Sawdon, Edward Scott, C. H. Sere, G. A. B. Sinclair, E. B. Smedley, F. H. Smelt, G. Cockburn Smith, H. A. Smith, W. W. R. Sparrow, E. R. Spencer, L. W. Spencer, W. E. Steavenson, H. W. Stuart, R. G. Thomsett, George Turner, J. E. Volze, V. A. Wartenberg, R. C. Watson, C. W. Weech, F. W. Wheeler, R. Whitelam, W. A. Welding.

MR. JOHN GAY, M.R.C.S., of Swindon, Wilts, has been appointed medical officer of health to the local board of that town.

DR. GAIRDNER, in his last report on the health of Glasgow, states that during July and August there was a considerable increase in the amount of enteric fever in various parts of the city, no doubt owing to the long summer drought.

PLYMOUTH DISPENSARY.—This excellent institution is pursuing its career of usefulness, as may be seen from the fact that during the three months ending August 31st, 834 patients were treated, of whom 529 were discharged cured or relieved, only 11 having died, and none of those from preventable disease.

HOSPITAL LIBRARIES. — Dr. Ernest Godard, who on dying, in Jerusalem, left several scientific legacies, also bequeathed £280 to the three hospitals of Paris where he had been resident medical officer,—Charité, Necker, and Venereal,—for the purchase of ward libraries intended for the instruction and amusement of patients. The effect of this legacy has been most satisfactory, from 600 to 1000 volumes being distributed every month to each of the above-named hospitals.

ENCOURAGEMENT TO THE STUDY OF GENERAL EMBRYOLOGY.—The late Professor Serres has left £2400 to the Academy of Medicine of Paris, the interest of which, every three years, is to be given as a prize to the best work on general embryology, applied, as far as possible, to physiology and medicine.

PURPURIC FEVER.—The Irish Registrar-General in his return for the June quarter states that there were a few fatal cases of purpuric fever in the quarter, in some instances

receiving the inappropriate name of "black death." A case in Downpatrick district terminated fatally in twenty-four hours. In Kilmarnock district a healthy child ten years of age was taken suddenly ill at the national school, and died in less than twenty-four hours of "black death." The morning had set in with lightning and hail; the child drank bad water, and spent hours in the tainted air of the outhouse, to avoid her class, not having learnt her lessons.

CONGRESS OF GERMAN NATURALISTS AND PHYSICIANS IN DRESDEN.—This is a model Congress as far as care and anxiety for the comfort of the members on the part of the committee, and the dignified and courteous patronage of the King, the Government, and the municipality are concerned. Each member on arriving was provided with every information, and had the choice of free quarters, ordinary lodgings, or hotel accommodation. The Government have placed a large building at the disposal of the Committee, and the first meeting was marked by speeches of the Secretary of State for the Home Department, the chief magistrate of Dresden, and the presence of the King and the Crown Prince. Two papers were read at this first meeting, one on Astronomy, and a second on the Teaching of the Natural Sciences, by Virchow. The business of the sections, analogous to the sections of our own British Medical Association, is to follow this highly satisfactory introductory general meeting. There are fifteen sections, among which the following bear upon medicine, surgery, and the allied sciences. No. 3, Chemistry and Pharmacy; No. 7, Comparative Anatomy and Pathology; No. 8, Anatomy and Physiology; No. 9, Practice of Physic; No. 10, Medical Reform; No. 11, Surgery and Ophthalmology; No. 12, Obstetricy and Diseases of Women; No. 13, Psychological Medicine; No. 14, Hygiene and Forensic Medicine. Valuable papers and discussions are expected, there being no less than 1127 members present; and the most brilliant festivities, excursions by rail for more than a thousand persons together (a large proportion of the members being accompanied by their wives), theatrical performances, concerts, &c., are throwing a peculiar charm over this scientific meeting.

VIENNA BEER.—The brewers have now another rival in the field. There can be little doubt but that the introduction of light claret and other cheap wines into this country must have diminished the sale of beer among the middle classes to some degree. But during the last hot weather the sale of Vienna beer was attempted on a small scale in the city, and it was found to take so with all classes, that there are now no less than five establishments where this beverage may be procured in London,—viz., three in the City and two in the Strand. When first imported into England, it was thought that the Germans resident among us would patronise the favourite drink of fatherland; and they do so; but Englishmen seem to like it quite as much as they do, and the quantity consumed is every day increasing. Have our tastes changed, or has our beer degenerated in quality? It is feared that the brewers will have but themselves to thank if there is a material falling off in the quantity of malt liquor consumed in England.—*Once a Week.*

CLOT BEY.—A letter from a friend of this remarkable man, lately deceased, was published in *L'Union Médicale* of the 8th of September. Clot Bey was originally practising at Marseilles, and hardly making a living, when Mehemet Ali determined to call into Egypt people skilled in science, arts, or trades. Clot volunteered, and soon became a great favourite with the Viceroy. The great difficulty, when it was decided to establish a medical school, was about dissections of the human body. The opposition was immense. Clot Bey, however, overcame it, and was teaching anatomy on the subject, when (at least this is stated in the letter abovementioned) one of the pupils, carried away by fanaticism, struck Clot Bey with a dagger. The blow glided along a rib, and the professor coolly took some court plaster out of his pocket, closed the wound with it, and went on demonstrating and remarking on the structure and direction of the ribs which caused daggers to glide. Clot Bey succeeded in settling the medical school upon a firm basis; he became a man of great note, amassed a large fortune, but never gave up either his religion or nationality.

On the 29th of August last the eminent chemical philosopher, Schönbein, died at Baden, in consequence of carbuncle, at the age of sixty-nine. It will be remembered that the deceased discovered ozone, gun-cotton, &c. Though settled at Bâle, in Switzerland, Dr. Schönbein was a native of Wurtemburg.

MEDICAL APPOINTMENTS.

BARRETT, J. J., has been appointed Public Vaccinator for the St. Saviour's Union, Southwark, under the provisions of the Act of 1867.

BODDY, Mr. H. W., has been appointed a District Surgeon to the Salford and Pendleton Royal Hospital and Dispensary, Manchester, vice J. St. P. Riley, M.R.C.S.E., resigned.

BUTLIN, C. H., M.R.C.S.E., has been appointed Medical Officer for the Parish of Camborne, in the Redruth Union, Cornwall, vice P. Vincent, M.R.C.S.E., deceased.

CONNEL, J., M.B., C.M., has been appointed Medical Officer and Public Vaccinator for the Parish of Eddleston, Peebleshire, and Medical Officer to the Peebleshire Poor-house, vice J. B. Junor, L.R.C.S.Ed., deceased.

CRAWFORD, R., M.D., has been appointed Medical Officer and Public Vaccinator for the Parishes of Peebles, Stobo, and Manor, Peebleshire, vice J. B. Junor, L.R.C.S.Ed., deceased.

HILL, J. H., L.R.C.P.Ed., has been appointed Resident Medical Officer for the Males at St. Pancras Workhouse, King's-road, N.W.

HILL, W. R., M.D., has been appointed Certifying Surgeon under the provisions of the Factories Act for Lymington and neighbourhood. Dr. Hill has also been appointed Honorary Assistant-Surgeon to the 3rd Hants (Lymington) Rifle Volunteers.

HUTCHINSON, T., L.R.C.P.Ed., has been appointed a Medical Officer to the Dispensary, Camborne, Cornwall, Surgeon to the Odd Fellows Club, Camborne, and to the New Seton Mine, vice P. Vincent, M.R.C.S.E., deceased.

KELLY, J. R., L.K.Q.C.P.I., has been appointed Medical Officer for St. Paul's West Ward Dispensary District of the Drogheda Union, vice R. Kelly, M.B., deceased.

LEWIS, Mr. M. B., has been appointed Assistant to the House-Surgeon, Stockport Infirmary, vice Mr. F. O. Bentley, whose appointment has expired.

MATTERSON, R. T., L.R.C.P.Ed., has been appointed Surgeon to the Newark Dispensary and Hospital, vice J. P. Lacy, M.R.C.S.E., deceased.

PACKARD, J., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for No. 9 or Isleham District of the Newmarket Union, vice John L. Newton, M.D., resigned.

PINDER, J. W., A.A. Oxon., has been appointed Assistant Resident Medical Officer to the General Infirmary at Leeds, vice H. W. Coleman, resigned.

SHUTTLEWORTH, G. E., B.A., M.R.C.S.E., Medical Associate of King's College, London, has been elected Assistant Medical Officer to the Asylum for Idiots, Earlswood, vice White, resigned.

WARREN, T., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for District No. 6 and the Bledlow Schools of the Wycombe Union, Bucks, vice T. A. Warren, M.R.C.S.E., deceased.

WELBY, E., L.R.C.P.L., has been appointed Physician to the Newark Dispensary and Hospital, vice J. Beevor, M.D., resigned.

WILLIAMS, Dr. O. T., has been appointed House-Surgeon to the Carnarvonshire and Anglesey Infirmary and Dispensary, Bangor, vice J. Rowland, M.R.C.S.E., deceased.

WILSON, G., L.R.C.P.Ed., has been appointed Medical Officer for District No. 2 of the Launceston Union, Cornwall, vice S. Paice, L.R.C.P.Ed., resigned.

Births, Marriages, and Deaths.

BIRTHS.

BRITTON.—On the 13th ult., at Great Driffield, the wife of Thomas Britton, M.D., of a daughter.

GILL.—On the 26th ult., the wife of J. B. Gill, M.D., of Dover, of a daughter.

GRANT.—On the 3rd ult., at Alderney, the wife of R. A. P. Grant, Esq., Assistant-Surgeon 43rd Light Infantry, of a son, who survived its birth only a short time.

HILL.—On the 28th ult., at Lymington, the wife of Wm. Robinson Hill, M.D., of a daughter.

HUNSTONE.—On the 21st ult., at Bury New-road, Manchester, the wife of George Hunstone, M.R.C.S.E., of a son.

SMITH.—On the 25th of Aug., at Madras, the wife of Colvin Smith, M.D., of a son.

SMITH.—On the 21st ult., at Enfield, the wife of Wm. Abbotts Smith, M.D., of a son.

WEBB.—On the 20th ult., the wife of Dr. E. L. Webb, of St. George's-road, Pimlico, of a daughter.

WINSLOW.—On the 25th ult., at Hammersmith, the wife of Lyttleton Stewart Winslow, LL.B. Cantab., youngest son of Dr. Forbes Winslow, of a son.

MARRIAGES.

HUNTER—HUTTON.—On the 16th ult., at Ridgeway Church, Derbyshire, Wm. M. Hunter, M.D., of Eckington, to Mary, eldest daughter of the late John Jermyn Hutton, Esq., of the Newlands, Ridgeway.

ILES—BIDDIFORD.—On the 24th ult., at Christ Church, Spa, Gloucester, Daniel Iles, Esq., Surgeon, of Fairford, to Kate, eldest daughter of Geo. Biddiford, Esq., of Northgate House, Gloucester.

THOMSON—BRAID.—On the 29th ult., at Colinsburgh, Fife, John Thomson, L.R.C.P., L.R.C.S.Ed., of Kingswinford, Staffordshire, to Catherine, eldest daughter of Wm. Braid, Esq.—No Cards.

DEATHS.

COOKESLEY.—On the 23rd ult., at The Grove, Boltons, South Kensington, J. M. Cooksley, M.D., late of Boulogne-sur-Mer, aged 58.

COST.—On the 13th of August, at Munmar, near Bombay, T. S. Cost, Esq., of Egutpoora, Assistant-Surgeon G.I.P. Railway.

FISHER.—On the 29th ult., at Sittingbourne, Kent, James Howard, the young st son of Charles Holdrich Fisher, M.D., aged 2 years.

GREENBANK.—On the 24th of Aug., at Philadelphia, the Rev. Richard M. Greenbank, A.M., M.D., of Sedbergh, Yorkshire.

MOORE.—On the 19th ult., T. J. Moore, M.R.C.S.E., of Torquay, aged 41.

ROOTES.—On the 27th ult., of diphtheria, at Guy's Hospital, London, where he was one of the House-Surgeons, George Rootes, son of W. symonds Rootes, M.D. of Ross, Herefordshire, aged 24.

SINCLAIR.—On the 18th ult., at Manchester, Eric S. Sinclair, L.F.P. & S. Glas., of Wick, Caithness-shire, aged 63.

Medical Diary of the Week.

Monday, Oct. 5.

ST. MARK'S HOSPITAL.—Operations, 9 A.M. and 1½ P.M.
ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

Tuesday, Oct. 6.

ROYAL FREE HOSPITAL.—Operations, 9 A.M.
ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
GUY'S HOSPITAL.—Operations, 1½ P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

Wednesday, Oct. 7.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M.
ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M.
ST. MARY'S HOSPITAL.—Operations, 1½ P.M.
GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.
LONDON HOSPITAL.—Operations, 2 P.M.
OPHTHALMIC HOSPITAL, SOUTHWARK.—Operations, 2 P.M.
OBSTETRICAL SOCIETY OF LONDON.—7½ P.M. Council Meeting.—8 P.M. Dr. Tilt, "On Irritable Uterus."—Dr. Meadows, "On Flexions of the Uterus." And other papers by Dr. Martyn, Dr. Cory, and Mr. Houghton.

Thursday, Oct. 8.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

Friday, Oct. 9.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
ROYAL FREE HOSPITAL.—Operations, 1½ P.M.
WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
CLINICAL SOCIETY OF LONDON.—8½ P.M. Mr. Maunder, "On Ligature of Femoral Artery."—Dr. Peacock: "Cases of Acute Rheumatism complicated with Disease of the Heart."—Mr. Hulke, "On Ichthyosis Glossæ."—Dr. Douglas Powell, "On a Case of so-called Fibroid Phthisis."

Saturday, Oct. 10.

ST. THOMAS'S HOSPITAL.—Operations, 9½ A.M.
ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M.
KING'S COLLEGE HOSPITAL.—Operations, 1½ P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

To Correspondents.

COURTESY AND CRITICISM.

THE strength of criticism consists in truth, clearness, and courtesy, whether men or things be the subject discussed. If the critic be the champion of a cause, he injures that cause grievously and irreparably if he fails in these qualities, and no more complete example of such a failure can be found than in an article published in the *Edinburgh Courant* of the 21st ultimo, a copy of which has by this time been received by many of our readers. The article in question refers to Professor Playfair, one of the candidates for the representation of the Universities of Edinburgh and St. Andrews, and we will at once briefly refute the assertions contained therein by recording—1st, that this gentleman was *never* put forward as *the* medical candidate; 2nd, that he possesses the degree of LL.D. of the St. Andrews University, and hence has an honourable claim to a doctorate. The innendoes about "plucking," &c., are, of course, absurdly mythical, inasmuch as it is well known that Professor Playfair discarded the study of medicine to pursue that of chemistry, and that he was offered a valuable appointment in connexion with that branch of science at the close of his last winter session at St. Andrews. We have placed these facts before the profession in justice to the candidate, and have, of course, nothing to say about the full-flavoured padding with which the writer of the article referred to has surrounded his cloudy assertions.

T. G.—All depends upon the amount of ventilation. A fire is preferable perhaps.

HÆMORRHAGE AFTER EXTRACTION OF TEETH.

To the Editor of THE LANCET.

SIR,—Troublesome hæmorrhage sometimes follows the extraction of a tooth. A case of this kind occurred a short time ago, in which bleeding continued for six or seven hours, until it was stopped by the following treatment, the effect of which is immediate and permanent, and gives no pain. I have treated five cases in the same manner:—Soften a bit of white wax, and mould it in a conical shape about an inch long, and press it into the cavity, at first lightly, and then very firmly, so as to fill it. Cover this with a thick pad of lint, to retain it in its place, and bind the jaws together for a few hours with some kind of bandage. Your obedient servant,

September, 1868. T. M. P.

GYMNASTICS.

IT is wholesome, in commercial as well as in many other things, that the workings should be *limited*. For many years past corporeal exercises have been advocated by the profession as conducive to health, and special encouragement may be given to athletic sports, hosting, riding, cricket, &c., in the young. But a restriction might be made as regards such gymnastics as include tumbling, flying, twisting, summersaulting, climbing, &c. &c. That very severe accidents have occurred during such exercises is well known, and this alone should make those concerned very cautious. Among other considerations, we would mention the danger, through great straining and effort, in somewhat weakly constitutions, of hernial protrusions, or at least a stretching of the rings and canal, preparing the way for ultimate mischief. These possible disagreeable consequences of ordinary gymnastics have been observed on the Continent as well as in Great Britain. In Paris, for instance, they have been pointed out with great force by M. Gallard in a paper read before the Academy of Medicine on the 4th of August last, the remarks bearing principally on the practice of gymnastics in the Government schools, called Lycées. As to immediate dangers, we may allude to the case of a poor little boy, about thirteen years of age, on whom an inquest was held a few days ago at the German Hospital, Dalston. The unfortunate lad had seen a good deal of summersaulting at some ride, and tried to imitate it. He placed himself on a chest of drawers, and succeeded in falling on his feet after turning head-over-heels. On trying again, however, he came upon his head, and actually broke his neck. On admission, the whole frame, from shoulders downwards, was paralysed, the mental faculties remaining intact. The breach could be felt about the fourth cervical vertebra. The patient was, of course, kept very quiet, but died in the night. The body of the above-mentioned vertebra was found broken asunder in a vertical direction, and an enormous effusion of blood was also observed along the medullary canal. No doubt many unrecorded cases of this kind have occurred, and it becomes the duty of the members of our profession, especially of those who are engaged in family practice, to warn parents touching the risks connected with *reckless* gymnastics.

Engineer.—The Report of the Royal Commission on Water-Supply appears to be postponed *ad Græcas calendas*. Why it is so long delayed seems inexplicable.

Dr. Charles Williams.—The subject shall receive attention next week.

CALOMEL IN DIARRHŒA.

To the Editor of THE LANCET.

SIR,—Newly-fledged members of the medical profession are apt to give opinions freely, and to dogmatise as if their ideas were the only correct ones; but after further experience we generally find them more chary in expressing their opinions, and I have no doubt this will be the case with your correspondent, Mr. C. J. Worts, M.R.C.S. He appears to fall foul of my letter to Dr. Bree, as if it were most impertinent in me to express any opinion regarding the usefulness of calomel in diarrhœa, and then requests me in the coolest manner to inform *him* what is my theory. Now, if he reads my letter again, he will find I broach no theory, neither do I attempt to bolster up any, but simply give my experience of a certain mode of treatment; his ire being apparently roused by the idea that I wish to take credit for a new method of treating diarrhœa—a desire which was far from my thoughts, my only wish being to make known to others what I considered a very useful and effective mode of checking some cases of diarrhœa.

I have no doubt Mr. Worts is about on a par with the rest of the profession in his knowledge of the causes which bring about summer diarrhœa, the symptoms of which I should have thought also were well enough known without his enumeration of them from Watson.

Perhaps Mr. Worts will kindly give his authorities for the statement that the treatment I recommended has had many advocates in years past, and that it had been given up for "a more simple, beneficial, and safe medicine." Although he is very dogmatic on that point, I challenge him to produce a single authority.

It is not my intention to reply to any further remarks on this subject, neither would I have done so now had I not known Mr. Worts better than most of your readers, and I really felt I could not allow his letter to remain unanswered. Your obedient servant,

Colchester, September 28th, 1868. HENRY LAVER.

To the Editor of THE LANCET.

SIR,—Had you not seen fit to suppress the remarks which I made upon the treatment of diarrhœa by calomel as pursued by Mr. Laver, we should have been spared the letter of Mr. C. Worts. I therein stated the dose, and what I conceived to be the *modus operandi* of the remedy, and I also stated that I had followed the practice in several cases of considerable severity and danger with complete success. I said nothing about the remedy being novel. I am not an advocate for the use of this drug in practice, as it used in my early life to be given; but the method used by Mr. Laver, notwithstanding the offensive remarks of Mr. C. Worts, is not only a novelty in practice, but according to my experience, which extends to something like fifteen or sixteen years before Mr. C. Worts was born, it is in the treatment of autumnal diarrhœa attended by the speediest relief to the symptoms, and a greater amount of success than any kind of treatment I have ever seen. Nothing, I think, could be more candid or honourable than Mr. Laver's acknowledgment that he discovered the treatment by accident. It displayed a love of truthfulness worthy of all example.

As I am responsible for the publication of Mr. Laver's letter, I have taken upon myself the task of defending it; but I must most positively decline to enter into any controversy, unless challenged in a gentlemanly and scientific tone of feeling. Your obedient servant,

Colchester, September 26th, 1868. C. R. BREE, M.D.

*** As regards the non-insertion of Dr. Bree's paper, we had not room for both it and Mr. Laver's letter, which contained Mr. Laver's own statement of the practice which it was Dr. Bree's main wish to commend. We naturally inserted Mr. Laver's letter.

AN HOSPITAL WANTED.

A LETTER in the *North Wilts Herald* from Mr. W. Boxall, M.R.C.S., of Swindon, points to the urgent necessity for the establishment of an hospital or infirmary in that town, which has now become the head-quarters of the Great Western Railway locomotive and carriage department. It appears that the nature of the work carried on at the railway factories is such as frequently to result in accidents of a more or less serious character to the artisans employed; yet there is no place provided either for the reception of such cases, or for cases of disease requiring isolation or special treatment, other than the cottages of the people themselves. Mr. Boxall describes the circumstances under which not long ago he assisted Mr. Swinhoe, the factory surgeon, in amputating the thigh of an unfortunate youth, which had been smashed and almost torn away from the hip-joint. There were first delay and much needless pain inflicted through the want of proper means of conveying the poor fellow to his home, where in the only down-stairs room, ill-lighted, and with only a common kitchen-table at hand, the operation had to be performed. Mr. Boxall urges that the Committee of the Great Western Railway Factory's Medical Fund would find it answer their purpose to have the privilege of sending any, or all, of the serious cases of accident befalling the members to an hospital or infirmary, rather than to be called on occasionally to discharge heavy hotel bills for boarding and lodging under the same emergency. Believing that the Great Western Railway Company, which has shown itself so careful for the comfort, convenience, and amusement of its *employés* at Swindon, only needs to be reminded that it has overlooked a provision of so much importance as that of hospital accommodation, Mr. Boxall suggests that steps should be at once taken to secure the co-operation of Sir D. Gooch, M.P., and the Directors of the Company, with the inhabitants of the town, in accomplishing the end desired. That Swindon, with its large and increasing population, should have been content to remain up to the present time without either hospital, infirmary, or dispensary, is greatly to be wondered at, seeing that the neighbouring town of Marlborough some time ago established one of the earliest of the excellent "Cottage Hospitals," now becoming so popular.

Nemo.—Such a microscope as that described for common use can be obtained for six or seven pounds of any of the instrument makers.

A Ratepayer.—The subject shall be inquired into.

Mr. Waring-Curran (Spalding) is thanked for his polite note.

NAVAL MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—Dr. Sandwith, in his account of the "Siege of Kars," records the merits and labours of the medical staff under his orders:—

"Here let me testify to the noble little band of ill-paid and ill-treated Turkish surgeons. I do not mean to say that their education equalled that of their brethren in the West; but their love for their profession, and their industrious attention to the wounded soldiers, both Turkish and Russian, in the midst of our crowded hospitals, and in the face of frightful difficulties, have never been surpassed. These gentlemen at once adopted any improved modes of treatment pointed out to them, and to their ready acquiescence in the hygienic means which I mentioned I ascribe our escape from any visitation of hospital gangrene or epidemic of typhus. And yet these men were never rewarded by promotion or decoration, while every other grade of officer received some mark of the gratitude of Government. Their usefulness was unquestionable, and the dangers and hardships they passed through far exceeded those endured by the military officers. *There is a singular resemblance between the English and Turks in their appreciation of military surgeons.* It is an undoubted fact that the medical men of Turkey, few and imperfectly educated as they are, take the lead in the civilisation of their country; and did their means ever allow them to free themselves from the trammels of a despised and unappreciated calling, they might be of inestimable benefit to their country."

The above reflections may meet official eyes. The recent illegal and degrading treatment of Dr. Stirling by Commodore Randolph has a something very Turkish about it, and will explain why there is a dearth of candidates for the navy.

Yours truly,

September, 1868. ANTI-BASHAW.

E. L. W.—1. The doctrine amounts to this, that the fewer the children, the larger is the proportion of divisible property or wages in each case; hence it is the duty of comparatively needy individuals, in order to prevent poverty and its consequences, to see that their families are not large.—2. Lumley's Manual.—3. About £100 or £130 a year.—4. There should be no difficulty if the body is seen soon after death, though the characteristic appearances would not be so marked as during life.

Adelaide should consult her medical attendant.

Parent.—The Sydenham and Queen's College Schools are now amalgamated.

A CAUTION RESPECTING LARYNGEAL BRUSHES.

To the Editor of THE LANCET.

SIR,—May I be allowed, through the medium of your columns, to give a hint to those who are in the habit of applying solutions to the interior of the throat and larynx by means of a curved brush, to see, before they use the brush, that it be securely fixed in the handle. I have always, ever since I possessed one of the curved brushes in the year 1864, examined it before using, and twice have had the brush come off easily into my hand, although by no means old or worn.

I need not say that to have the brush drop off from the stem into a patient's larynx would place the operator in a very awkward position, and might necessitate immediate tracheotomy. I have now a brush fastened with a small pin, and I trust it is as safe an instrument as can be obtained.

Yours obediently,

JOHN C. THOROWGOOD, M.D. Lond.,
Assistant-Physician to Victoria Park Hospital.

Welbeck-street, September 29th, 1868.

THE UNIVERSITY OF LONDON ELECTION.

THOSE graduates of the University of London of Convocation standing who wish to vote at the forthcoming election for a representative of the University in Parliament, and are disqualified from the fact of their not having hitherto paid the necessary Convocation fees, should take notice that a meeting of the Senate will be held in a few days' time to close the list of voters. It is necessary, therefore, that those who now wish to become the possessors of a vote should without delay transmit to the Registrar the composition fee of £1, with a request that their names may be passed by the Senate. We understand that as many as 400 graduates of Convocation standing have failed to qualify as voters.

J. P.—There are special departments for diseases of the skin at most of the metropolitan hospitals, so that in this respect our correspondent need have no difficulty.

THE SPREAD OF INFECTIOUS DISEASES.

DR. CORNER, in his last Annual Report on the Health of Mile-end Old Town, observes that schools and places of summer resort, especially crowded sea-side places, are prominent and fertile propagating media of such diseases as measles, scarlatina, whooping-cough, &c. He believes that two-thirds of the contagious diseases of children above four or five years of age may have their sources of infection traced to schools. A pupil returning to school before thoroughly convalescent, and without the observance of proper precautions as to the destruction of infectious relics, may become the source of infection and death to numbers of others. The danger of sea-side lodgings in that respect is so well known that most people are fully alive to the necessity of taking every possible precaution; and, besides, there is the Sanitary Act, with its 39th clause on their side.

Mr. F. Maxwell, (Cambridge.)—The circular is beneath notice.

DIAGNOSIS OF TWINS IN UTERO BY AN EXAMINATION PER VAGINAM.

To the Editor of THE LANCET.

SIR,—Should you deem the following worthy of insertion in the columns of your journal, I would feel obliged by your giving it early publicity:—

Having these last fifteen years had considerable experience in the practice of midwifery, an idea suggested itself to my mind that the presence of plurality of children could be discovered in utero by an examination per vaginam. In single births (natural presentation) it is invariably the case that the uterus descends with the head into the cavity of the pelvis, and frequently to the very verge of the outlet. Now, from what I have experienced of late years, this was not so in twin births; for the uterus could not be felt with the finger prior to delivery of first child in any of the twin cases which I attended, and I attribute its absence to the presence of the second child, with liquor amnii, being thereby retarded in its descent into the cavity of the pelvis, and exerting contractile influence upon the first fœtus.

I wish it to be understood that after the first stage of labour is advanced, and the head of the first child propelled into the cavity of the pelvis, I form the diagnosis.

I should be glad to know the opinions of some more experienced accoucheurs whether these remarks can be relied on as a general rule in twin births.

I remain, Sir, your obedient servant,

September, 1868. OBSTETRICUS.

Sanitas.—The Act 31 and 32 Vic., cap. 130, does not make the appointment of *medical* officers of health compulsory. Clause 4 is thus worded: "If in any place to which this Act applies there is no officer of health within the meaning of this Act, the local authority, with the approval of one of her Majesty's principal Secretaries of State, shall forthwith appoint such an officer," &c. &c. But clause 3 unfortunately defines "officer of health" to "mean and include medical officer of health, *sanitary inspector, or any statutory officer* performing the duties which a medical officer or sanitary inspector performs under or by virtue of any Act of Parliament." The Local Board, therefore, might, if so minded, have objected to the appointment of a *medical* officer of health, on the ground that in their nuisance inspector they already possessed an officer of health "within the meaning of the Act." We are glad to know that they have taken a more enlightened view of the requirements of the town.

Dr. Henry Steele, (Montrose.)—The communication shall receive attention next week.

Dr. G. P. Rugg requests us to state that the silly remarks appended to his initials, "G. P. R.," which every now and then appear in a medical contemporary, are not due to any communication received from him.

A PLAN TO PREVENT THE SPREAD OF SCARLATINA.

To the Editor of THE LANCET.

SIR,—Perhaps you will think the following suggestion worthy of insertion in your valuable journal. I believe I have seen good result from the adoption of the plan.

As soon as desquamation sets in after scarlatina, I oil my patients over from head to foot, hair and all, and then wash them in a warm bath of common washing soda and water and soap. I think a little carbolic acid might be added with advantage to the oil. In this way I fix and remove the powdery epithelium, which, becoming dry in the clothes and on the body, breaks up into a fine powder, and pervades the neighbourhood of the affected party, and thus becomes a means of communicating the disease in schools. I never allow the excreta to be thrown down the same closet to which other children have access, using at the same time plenty of chloride of lime and water, both in vessels and closets.

It is a popular idea that the period of desquamation is the most contagious period of the disease, and this I believe to be the case; but by adopting this plan, I have had the disease break out in crowded houses and yet not spread. The bedclothes and dresses which have been used should, on removal, be instantly placed in hot soda-and-water.

I am, Sir, yours obediently,

Slough, September 10th, 1868. W. U. B.

A HORRIBLE SIGN.

THE *Pall Mall Gazette* directs attention to a noteworthy fact, which shows very clearly that the old *régime* of ignorance in matters of domestic economy, and especially as regards the preparation of food, which is now the bane of nine-tenths of the homes of the industrial classes, cannot last much longer. At Glasgow the cooks and attendants (all women) at Mr. Corbett's cheap dining places are, it seems, eagerly sought after as wives by the clerks and artisans of the city; so much so, that out of 200 girls so employed, not fewer than 24 have been married during the present year. How much of the misery and actual disease in the world result from the badly-cooked food it is impossible to estimate; but enough is known for certain to cause us satisfaction in learning that some of it is in the way of abatement at Glasgow.

A Subscriber of Seventeen Years.—In a child of eight or nine years: 1st. The duration of the evidence of ruptured hymen will, of course, depend on the amount of injury inflicted. If great, the physical signs will remain for many days; if slight, they may entirely disappear in a few hours. 2nd. The signs of recent rupture in a child are—heat; swelling of the genitals; profuse discharge, tinged with blood, which in the course of a day or two becomes muco-purulent. There is also painful micturition, and a good deal of swelling about the orifice of the urethra. 3rd. When the injury is slight, and penetration has been incomplete, the marks are usually only those of bruising of the external genitals, which may pass off entirely in twenty-four or forty-eight hours. 4th. From three to six days may be said to be about the average duration of the physical signs of violence in the child.

Viudex.—Our correspondent will see that the subject is referred to in another part of the journal.

F. J. (Wolverhampton) should inspect the newly planned bath-room at the Epileptic Hospital in Queen-square.

Dr. C. Black (Glasgow) shall receive a private note.

PHTHISIS AND THE BRITISH ASSOCIATION.

To the Editor of THE LANCET.

SIR,—Your annotator and reporter has trusted too much to his imagination, and his *animus* is too transparent not to be seen through by your readers. He does not, so far as I remember, even state the title of my paper, "The Statistics of Pulmonary Consumption in the 623 Districts of England and Wales." This paper was read on the last day of the meeting; and I stated that, as several papers had to be read in the short space of an hour and a half, in justice to those who had to follow me, I would only give some of the heads of the inquiry; that my investigation on that occasion related entirely to statistics, and that I could not read the long table that accompanied my communication, containing the proportion of consumptive cases in the 623 districts of England and Wales in relation to the population; my analysis of the Registrar-General's Report, extending from 1850 to 1861. The discussion was necessarily limited, and a Mr. Holland, a surgeon, favoured the meeting with an allopathic quantity of objections—"that phthisis and pulmonary consumption were totally distinct diseases; that there was not an excess of phthisis in the western towns; that the census (which extended over ten years) was taken on the 1st of April; that the average of deaths I had quoted from the watering-places was double, treble, and quadruple what it was in April, &c.; and that all pulmonary diseases were placed under the head of Phthisis." (*Norfolk Chronicle*, Aug. 27th, 1868.) I mention this because, although your commentator thinks my paper "not good enough for a Medical Society," I believe it would have been better appreciated in an assembly of medical men, and that less nonsense would have been uttered. I sent no abstract of my essay to any of the papers; but after it was read a reporter asked me for it, that he might publish it entire in one of the local journals." I replied that I intended to publish it myself, and that he could make a few extracts. This originated the somewhat incorrect report alluded to. The Editor of the *Norfolk Chronicle*, instead of copying the statistics of the different districts in Norfolk, added, *what did not appear in my paper*, "that the deaths at Norwich from phthisis were during six years at the rate of 1 death to 12·11 deaths from all causes." This unwarrantable addition was made probably at the suggestion of some medical man. Other inaccuracies appear also in the report. Thus the word *generally* should have been added to the statement that the death-rate corresponded with the density of the population. Among the causes, I said *perhaps* the communicability of the disease.

Allow me now to say a few words on the comments of your commentator, respecting dampness of soil and atmosphere as one of the causes of pulmonary consumption. In my paper on "Tuberculous Affections in Man and in the Lower Animals, in relation to their supposed Zymotic Nature," read before the meeting of the St. Andrews Graduates' Association, 1867, and published in the "Transactions," page 110, I especially stated that in a dry atmosphere (hot or cold) persons were *generally* more exempt from phthisis; and if your reporter had read the recent abstract of my paper, he would have seen that this statement was repeated at Norwich. I said there that I had been told previous to the meeting that Dr. Buchanan, in the recent Report of the Privy Council, had come to the same conclusion; but on an extensive examination of the subject in this and in other countries, many exceptions would be found to this rule. I have since read Dr. Buchanan's Report, 1868, and I find that his inquiries extend only to the three south-eastern counties, containing a population of 1,118,372, living in 3812 square acres, and that the ages are from 15 to 55. I think Dr. Buchanan also, in commenting upon the rate of mortality of Leith, Edinburgh, Perth, Aberdeen, Dundee, Paisley, Glasgow, and Greenock, appears to be ignorant of the fact that the very objectionable system prevails in the Scotch returns of classing *hydrocephalus* and *tabes mesenterica* with *phthisis*—an assemblage that invalidates all fair comparison, especially as Dr. Buchanan appears to limit phthisis to certain ages. Dr. Bowditch's book I have not seen.

Again, as regards occupations, I said I believe that they had *not so much influence* on the production of phthisis as was generally supposed. I repeat the statement, and shall be glad if your commentator or any of your readers can enlighten me on this subject. I know that my paper is deficient in many points; but I think that it would have been more honest on the part of your annotator to have read it before he came to the conclusion "*that it was weak and unsatisfactory in the extreme.*" I was vain enough also to think that I was "*well up*" in all the modern doctrines relating to phthisis.

Yours obediently,

Beaufort-street, Chelsea, Sept. 7th, 1868. EDWARDS CRISP.

PETROLEUM.

THE London and North-Western Railway Company have given notice that they will not carry in any of their vessels trading between the ports of Holyhead and Dublin, "any petroleum, Rangoon oil, Burmah oil, any product of them, or any oil of petroleum, peat, or other bituminous substance, or any gunpowder, aquafortis, oil of vitriol, or any other goods which, in the judgment of the Company, are of a dangerous character." No reference is made to the conveyance of these substances by railway; but it is earnestly to be hoped that some measures will be taken, either as regards the time or the mode of conveyance, to obviate the possibility of a repetition of the Abergele catastrophe.

Mr. B. Smith.—The minimum fee for vaccination performed at the surgery of the public vaccinator under the new Act is 1s. 6d.

Philo.—First-year's students should confine their attention as much as possible to anatomy, chemistry, and physiology.

Chirurgus.—The Medical Register contains the name of the gentleman referred to. The law would not take cognisance of what would be regarded as a clerical error. It should not have been made.

T. P.—Two dispensaries have been in operation in the Poplar Union for some months past. The system is reported to work very satisfactorily.

COMMUNICATIONS, LETTERS, &c., have been received from—Prof. Erichsen; Dr. Pollock; Dr. R. Barnes; Dr. Burdon Sanderson; Lord Lyttelton; Dr. Sisson; Dr. A. Simpson; Mr. Holden; Mr. Whittock, Leeds; Mr. Davey, Witham; Mr. Mason; Mr. Meadows, Otley; Mr. Palmer, Heckmondwike; Dr. Howe; Dr. West, Launceston; Mr. Mackaye; Mr. Major; Mr. Moore; Mr. Gay, Swindon; Dr. Macnamara; Mr. Olden; Dr. Moxon; Dr. Barrett; Dr. Skegg; Mr. Maxwell, Cambridge; Dr. Oldham, Bursiem; Dr. Bryan; Messrs. Salt, Birmingham; Dr. Herbert, Aldershot; Dr. Gordon, Pentre; Mr. Thompson, Carlisle; Mr. South, Aberdeen; Messrs. Howell and Co.; Mr. Holford, Manchester; Mr. O'Brien, Enniskillen; Dr. Black, Glasgow; Dr. J. Morris; Mr. Fenton; Dr. Thompson, Droxford; Dr. Waters, Liverpool; Mr. Waller, Piegy Burgh; Mr. Hayling, Alderney; Mr. W. Plumbly; Mr. Wilton, Rotherham; Dr. Roberts; Mr. Leonard; Dr. Langford, Southwick; Mr. Holden; Mr. Marriott; Dr. Hunter, Paisley; Mr. Coldstream, Edinburgh; Dr. Cresswell, Dowlais; Dr. Kendrick; Dr. Hill, Lymington; Dr. Rae; Mr. Wadd; Dr. Macnab; Mr. Robson; Mr. Thorman; Dr Gervis; Dr. Gill, Dover; Dr. Thorowgood; Mr. Vine; Dr. Coles, Croydon; Dr. Hill, Noyton; Dr. Hume, Kingston, Jamaica; Mr. James; Mr. Laver, Colchester; Mr. Marsh, Littlemore; Mr. Grewcock, Nottingham; Dr. Crowther, Luddenden; Mr. Giles, Coggeshall; Mr. Robinson; Dr. Britton, Driffield; Mr. Jacob; Mr. R. Smith, Elton; Mr. Potts, Handsworth; Dr. Robertson; Mr. Holland; Mr. Riley; Dr. Grant; Mr. Nicholls; Mr. Vacher, Birkenhead; Mr. Kington; Mr. Temple, Kebworth; Mr. Reid; Mr. Ashburner; Dr. Glück; Mrs. Baines; Mr. Gabriel, R.N.; Mr. Philip; Mr. Hunstone, Manchester; Mr. Cuffe, Mettra; Dr. Scott; Mr. Deane; Mr. A. Haviland; Dr. Thomson, Kingswinford; Dr. Denton, Hornsea; Dr. Black, Liverpool; Mr. Laird; Mr. Clayton; Mr. Owens; Dr. Kerr, Gal, Canada; Mr. Reed, Fairford; Mr. W. H. Nower, Gosport; Dr. March; Dr. Williams, Norwich; Dr. Vallance, Stratford; Mr. Shuttleworth, Earlswood; Mr. Haughton; Dr. Rodger, Aberdeen; The Lecturers of the Charing-cross Hospital; B.; A M.R.C.V.S.; Medicus; An Old Boy; W. A. S.; Clinical Society; R. P.; Ignoramus; R.; W. W. R.; A Country Practitioner; E. L. W.; &c. &c.

THE *Brighton Times*, the *Glasgow Herald*, the *Liberal Review*, the *Dumfriesshire Reporter*, the *Gateshead Observer*, the *Dominion Medical Journal*, the *Surrey Advertiser and County Times*, the *Brighton Gazette*, the *Tower Hamlets Express*, the *Lincolnshire Chronicle*, and the *Bucks Herald* have been received.

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